

GOVERNMENT OF INDIA
DEPARTMENT OF ARCHAEOLOGY
CENTRAL ARCHAEOLOGICAL
LIBRARY

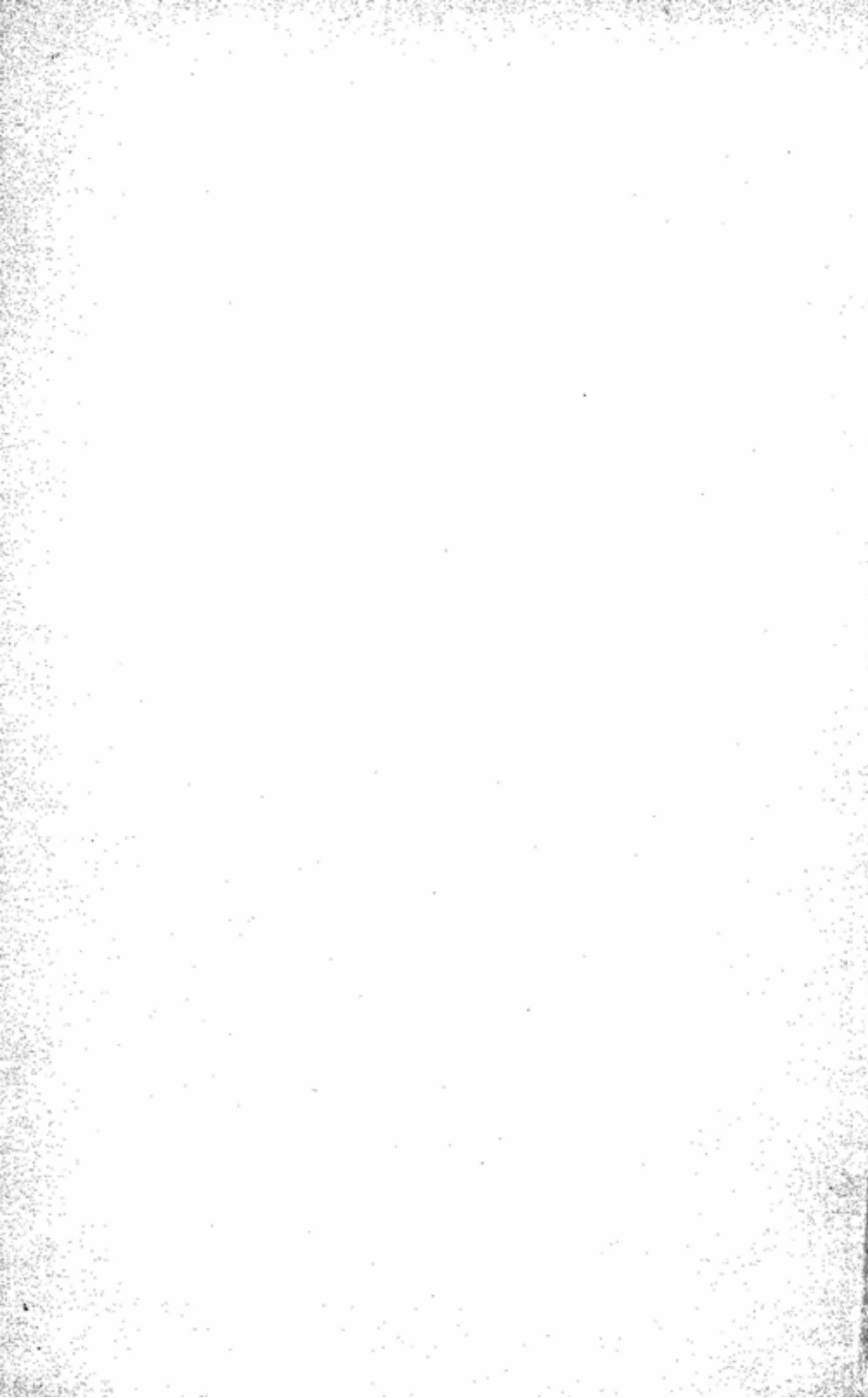
ACC. No. 12132.
~~CLASS~~

CALL No 634. 31 Tel.

o/p

SK 27/6

CENTRAL ARCHAEOLOGICAL
LIBRARY.



A 11
11529

HESPERIDES

GENERAL APTITUDE
11529



John B. Seale & Company 119 L. A. 100.

Orange, Citron, Lemon and Other Fruit in Basket. Roman Mosaic, probably from Tusculum, c. A.D. 100.

(*Museo Nazionale, Rome.*)

HESPERIDES

*A History of the Culture
and Use of Citrus Fruits*

12132

By

S. TOLKOWSKY

WITH 113 PLATES, 10 FIGURES IN TEXT
AND 5 STATISTICAL TABLES

*"It is not thy duty to complete the work, but
neither art thou free to desist from it."*
(Ethics of the Fathers.)



634.3
Tol

CENTRAL ARCHAEOLOGICAL
LIBRARY NEW DELHI

Acc. No. 634.3

Date. 20-4-46

Call No. Kg H. Tol

LONDON

JOHN BALE, SONS & CURNOW, LTD.

83-91, GREAT TITCHFIELD STREET, W.1

1938

U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C. 20250

Acc. No. 12132

Date 29-11-61

Call No. 634.3/Tol

MADE AND PRINTED IN GREAT BRITAIN

Amis B221 - 20-6-18

To
ADA,
NAOMI
and
DAN

PREFACE.

IN 1946 it will be three hundred years since Giovanni Battista Ferrari, a learned Jesuit priest and botanist of Sienna, published in Rome his monumental treatise entitled *Hesperides sive De Malorum Aureorum Cultura et Usu Libri Quatuor* (Hesperides, or Four Books on the Culture and Use of the Golden Apples); in choosing the same title for his present volume, the author wished to pay a tribute to the labours of his distant predecessor, the first pioneer in the field of citricultural history. Yet, whilst the "Hesperides" of 1646 was entirely Ferrari's own work, that of 1937 could not have been completed had it not been for the co-operation of a number of friends and correspondents, many of them fellow-members of the Royal Asiatic Society of Great Britain and Ireland, who have been kind enough to help the author to secure copies of interesting documents, or translations of ancient texts written in languages with which he himself is not familiar, or photographs of pictures and monuments in distant countries. Among these many generous and disinterested helpers the author wishes to thank in particular: M. de Angelis, sometime Italian Consul General in Jerusalem; M. José A. Balenchana, lately Spanish Vice-Consul in that city; Professor Dr. G. Barkan, Director of the Pharmacological Institute of the University of Tartu-Dorpat (Estonia); M. Emile Bréchet, Keeper of the Bardo Museum in Tunis; Professor G. Coedès, General Secretary of the Royal Institute of Bangkok (Siam); Col. D. M. F. Hoysted, Secretary of the Royal Asiatic Society of Great Britain and Ireland; Dr. N. J. Krom, Professor of Javanese Archaeology at the University of Leiden; Prof. Dr. W. Robyns, Director of the State Botanical Gardens in Brussels; Mr. F. D. Sladen, Superintendent of the Reading Room, and Mr. Arthur Waley, Keeper of Oriental Prints and Drawings, at the British Museum, London; Mr. G. Yazdani, Director of the Archaeological Department, Hyderabad. Very special thanks are due to Mr. P. Subrahmanya Sastri, Sanscrit Librarian of the National Library of Bangkok (Siam), for an

exhaustive and learned memorandum on citrus terminology in ancient India; to M. Tsiang Ping Yan, Director of the Astronomical Observatory at Tsingtao (China), who collected and translated with great patience a number of references to citrus fruits in the classical literature of China; and to Mr. I. Sieve, of Tel-Aviv, for great assistance in reading the manuscript. Lastly, the author wishes to express to His Majesty's Stationery Office his appreciation of their courtesy in permitting him to reprint, from one of their publications, four of the tables reproduced at the end of chapter X.

Owing to the wide range of countries and the long period of history which had to be explored, the number of works quoted is so large—many of them with long and cumbersome titles—and the references to them so numerous, that to give the full titles in the footnotes would have proved detrimental to the aspect of the book and uncomfortable to most readers. These references have therefore been relegated to the end of the volume, where they will be found under the heading "Books and Articles Quoted," arranged according to the alphabetical order of the names of the authors preceded by the particular combinations of capital letters which are used to designate them in the footnotes. It is thought that this method will give the more critical or more inquisitive reader the possibility of checking the writer's statements or verifying his quotations, without unduly overburdening the text itself; in this connection readers will kindly note that any reference which the author has not been able to check in the original source, is referred to in the footnotes as "quoted by . . ."

In a number of instances it will be found that, whilst the author describes conditions during a given century, the printed source quoted as authority for his statement may belong to the subsequent century; the explanation of such apparent discrepancies is quite simple. If in a book written during the early years of a given century there occurs a description of a plant which, from the nature of the description or the context, appears quite clearly as being already common in the country, it is obvious that the introduction of the plant into that country cannot have been very recent, and must go back at least to a generation or two. As it happens, quite a number of important

sources quoted are dated in the early years of different centuries, and in such cases the author has simply drawn his conclusions, without in each instance elaborating the argument just advanced. A few words of comment may be required as to the version quoted of certain sources. One of the greatest difficulties with which the author has had to contend, has been the absence, during Antiquity and the Middle Ages, of any uniform terminology to designate the different species and varieties of citrus fruits, a circumstance which more than any other has been responsible for the numerous errors of past writers ; the difficulty was still increased whenever any such source was translated into another language than that of the original, especially when the translator belonged to a country where citrus fruits were not naturally grown. In view of this circumstance the author has endeavoured to discard translations and to rely, whenever possible, on the actual original versions of the sources referred to by him.

S. T.

Tel-Aviv, December, 1937.

INTRODUCTION.

ORANGES, lemons, citrons and grapefruit are found mentioned in the literature of different nations for the last three thousand years; treatises devoted especially to the description and uses of these fruits and to the methods for growing them have been written as far back as the twelfth century A.D.; Ferrarius's *Hesperides* of 1646 contained several short chapters of mythological and historical matter; but not until the beginning of the last century has an attempt been made to investigate in a modern scientific spirit the history of citrus fruits, that is say, the problem of their origin and of the why, when, and how of their expansion throughout the world. In 1811 Georges Gallesio, Sub-Prefect at Savona, near Genoa published in Paris his *Traité du Citrus* (Treatise of the Citrus), a volume of 363 pages, about half of which is devoted entirely to the history of these plants, whilst the remainder of the volume contains detailed descriptions of the different species and varieties together with technical advice as to the best methods of growing them. The book was the result of many years' research into the works of Greek and Latin classics, of Italian mediaeval and Renaissance writers, and of a few Arab botanists, geographers, and historians whose writings had then only just been made available to the general public through Spanish and French translations. Viewed in the light of the sources at Gallesio's disposal, his historical chapters represent a very praiseworthy achievement, combining with an astounding erudition quite exceptional powers of intuition and of logical deduction. In fact, with the solitary exception provided by G. Goeze's *Beiträge zur Kenntniss der Orangengewächse*—a short pamphlet of 32 pages published in 1874—whatever has been written on the history of citrus fruits for the last 120 years has mostly been copied or adapted, directly or indirectly, from Gallesio. But being unacquainted with Semitic languages, he had to rely for the interpretation of Arabic and Jewish sources on translations

made by authors who, not being botanists, were ignorant of the intricacies of oriental ancient and mediæval citrus terminology. On the other hand such sources of information as the botanical and general literature of the peoples of Southern Asia and the Far East, their folklore, their medicine and their art, had not in his time been made available, by way of translation or reproduction, to the western world, except in a very limited measure. And so Gallesio's work, despite his outstanding merits, was marred by a number of very important errors and omissions.

To-day, we labour no more under the same disabilities. Thanks to the efforts of several generations of students, the life, material and spiritual, of ancient nations as well as of present-day oriental races, their writings and their monuments, have been made known to us with a remarkable wealth of detail. Yet, notwithstanding the technical and scientific facilities enjoyed by present-day investigators, their attempts to reconstruct the history of citrus fruits throughout the world have not been crowned with any greater success than those of their predecessors of long ago. The principal obstacle that baffled both ancients and moderns has been of a philological nature. Due to the fact that the citron was the first citrus fruit known to the classical world, the name given to it by the Latin writers, *citrus*, was subsequently extended to all other plants which, as they successively found their way into the Mediterranean world, were, on account of their similarity in botanical characters, felt to be closely related to the citron itself.¹ In the same manner the Persians and the Arabs, who, on becoming first acquainted with the citron, had called it *otruj*, *atronj*, or *tronj*, continued to call by the same name a number of other citrus fruits, as and when these became known to them: whilst in mediæval Arabic literature the word *otruj*, without any further adjective, refers at times to the citron only and at times to the whole genus as such, the word *taronja*, which is of the same root, was used in the seventeenth century to designate the sweet orange and still has the same meaning in the Catalan dialect spoken to-day in Barcelona and the Balearic Islands; in Tripoli (Syria) it is the sour orange that is called *trunj*. It is mainly owing to

¹ Linné, in adopting *citrus* as the scientific name of the whole genus, did not act otherwise.

this philological misunderstanding—that is, the failure to appreciate that *citrus* or *otruj* was also used as the name of the genus—that, one after the other, all past writers on the history of citrus fruits have referred to the citron, and to the citron alone, every mention and every description of fruit of the same genus, which they found in ancient or mediaeval documents, with the result that a large number of sources have been misinterpreted and used to build up an apparently very complete, yet in reality largely fanciful, story of the expansion of the culture of the citron-tree; whilst on account of the assumed absence of texts referring to other citrus fruits, oranges, lemons, and grapefruit came to be thought of as very late newcomers in Europe. But if once one is in possession of this clue, if once one understands that *kitron* in Hellenistic Greek, or *citrus* in the Latin of the Roman classics or the Italian Renaissance writers, or *etrog* in ancient Hebrew and Aramaic, or *otruj* in mediaeval Arabic, were used to designate not only the citron itself, but in many a passage also various other fruits of the same genus—just as in China *chü* (literally orange) and in Malaya *lemo* (lemon)—then it becomes possible, and often comparatively easy, to distinguish in the texts between references to the one or to the other of the different species; and it will be found that, far from there being no sources available for the reconstruction of the history of oranges, lemons, and grapefruit, a great wealth of material offers itself to our investigation.

This conception of the term *citrus*, or its equivalent in other languages, standing, in the botanical literature of the different nations, not only for the citron itself but for the whole genus is, as the reader will find in perusing the present volume, fully confirmed by the evidence furnished by another class of sources whose reliability is beyond all challenge, namely the fine arts: painting and sculpture. The impulse which—be it from motives connected with ritual or magic, or from a mere desire to imitate—first drove primitive man to copy in flat or in relief the appearance of the things that filled the world around him and especially those on which he preyed for food, at more advanced stages of civilization led to the use of flowers, leaves and fruits, and of whole trees, as perhaps the most important motifs of decorative art; this development reaches its zenith in the sixteenth and seventeenth centuries A.D., when

a general desire for or indulgence in riches and the more material satisfactions of life, including particularly the pleasures of the table, caused the appearance of whole schools of painters of "still life" whose works now fill numerous halls in the art collections of Europe and America with the most gorgeous display of every good thing which the world offered to the appreciative palate of the princes or the wealthy merchants of the age. In front of a picture or sculpture representing trees, flowers, leaves, or fruit, drawn with all the minute faithfulness of which the artist was capable, there can be no room for hesitation or doubt as to the nature of the object which the craftsman meant to represent; that is why the naturalistic art of the Hellenistic East, of imperial Rome, of the Italian and French Renaissance, and of the Dutch and Flemish schools of nature painters, offers to the student of the history of citrus fruits a wealth of accurate and reliable sources which hitherto appear to have never yet been used.

The author fully realizes that he too has left many a source untapped; but the wide range of botanical and medical literature, of poetry, of folklore, of religion and of art on which he has drawn for his information, encourages him in believing that, compared with the views hitherto held on the subject, the picture which he has tried to unfold before the reader's eyes marks a not unimportant advance towards the goal of scientific truth.

CONTENTS.

	PAGE
Preface	vii
Introduction	xi
List of Illustrations	xvii
CHAPTER	
I. The Home of the Genus Citrus	1
II. The Acclimatization of the Citron in Western Asia and Northern Africa	39
III. The Acclimatization of the Citron in Southern Europe	71
IV. Roman Trade with India and the First Appearance of Oranges and Lemons in the Mediterranean World	95
V. The Rise of Islam and the Revival of Citriculture in the Mediterranean World	112
VI. Citrus Fruits and Citrus Trees during the Renaissance in Italy and Spain	149
VII. Citriculture in Non-Mediterranean Europe	198
VIII. The Age of Discovery : The Riddle of the Sweet Orange. Early Citriculture in Africa and in America	234
IX. Citrus Fruits in the Life, Letters, and Art of Non-Mediterranean Europe	269
X. Present-day Production and Consumption of Citrus Fruits	313
Conclusion	323
Books and Articles Quoted	325
Index	353

LIST OF ILLUSTRATIONS.

PLATES		<i>Inserted at page</i>
I.	<i>Frontispiece.</i> Basket with Citrus Fruits (Roman Mosaic). <i>In colours</i>	
II.	Bronze Chinese Teapot in Form of Buddha-Hand Citrons (Eighteenth Century)	8
III.	Chinese Coloured Woodcut : Buddha - Hand Citron (probably Seventeenth Century) ..	9
IV.	Copper-gilt Statue of the God Kuvera (from Tibet, Nineteenth Century)	24
V.	Temple-Picture of the God Kuvera (from Tibet, Sixteenth Century)	24
VI.	Painted Ceiling of the Ajanta Caves	24
VII.	Painted Ceiling of the Ajanta Caves	24
VIII.	Cedar Cone in Assyrian Ritual (Sculptured Stone Slab from Nimrūd)	52
IX.	Cedar Cone in Assyrian Ritual (from Khorsabad)	52
X.	Yusuf and Zuleikah (Persian Miniature, Sixteenth Century)	60
XI.	Yusuf and Zuleikah (Persian Painting, c. A.D. 1700)	60
XII.	The Goddess Attis (Silver Dish from Boscoreale, c. A.D. 100)	72
XIII.	Herakles and the Apples of the Hesperides (Metope from the Zeus Temple at Olympia, c. 460 B.C.)	72
XIV.	The Farnese Herakles (Marble Statue by Lycon, First Century B.C.)	72
XV.	The Same, Detail	72
XVI.	Wall Painting at Livia's Villa at Prima Porta (c. 30 B.C.)	87
XVII.	Marble Slab from the Tomb of the Haterii near Rome	88
XVIII.	Dancing Maiden : Wall-painting from Pompei (c. A.D. 75)	88
XIX.	The Same, after an Eighteenth Century Spanish Tapestry	88
XX.	Still Life : Wall-painting from Pompei (c. A.D. 75)	88
XXI.	Bacchanal : Bas-relief from Herculaneum (c. A.D. 75)	92
XXII.	Dancing Maiden : Wall-painting from Pompei (c. A.D. 75)	92
XXIII.	Mosaic Pavement from Roman Villa at Carthage (probably Second Century A.D.)	100
XXIV.	Lemons. By Luis de Menendez (1716-1780)	100
XXV.	Lemons on Wall-painting from Pompeii (c. A.D. 75)	104
XXVI.	Orange in Roman Mosaic from Pompei (c. A.D. 75)	104
XXVII.	<i>Aurantium callosum</i> , after Ferrarius (A.D. 1646)	104

PLATES		<i>Inserted at page</i>
XXVIII.	Detail from Mosaic shown on Pl. XXVII. In <i>colours</i>	104
XXIX.	Lemons on Sculptured Stone at Capernaum (Second Century A.D.)	108
XXX.	Byzantine Mosaic Ceiling at S. Costanza, Rome (c. A.D. 330)	108
XXXI.	The Same, Detail: Oranges and Citrons	110
XXXII.	The Same, Detail: Lemons	110
XXXIII.	Cordova: The Orange Court and Clock Tower of the Cathedral	112
XXXIV.	Seville: The Orange Court of the Cathedral and the Giralda	112
XXXV.	Granada: The "Garden of the Princess Lindaraja" at the Alhambra	112
XXXVI.	Granada: The "Court of the Myrtles," at the Alhambra	112
XXXVII.	The Banquet of Herod. Fourteenth Century Mosaic at San Marco, Venice	150
XXXVIII.	The Banquet of Herod. By a Pupil of Orcagna (A.D. 1364)	150
XXXIX.	Bean Feast. By Jan Steen (1626-1679)	152
XL.	Bean Feast. By Jacob Jordaens (1593-1678)	152
XLI.	The Last Supper. By Titian (1567)	154
XLII.	The Last Supper. By Juan de Juanes (1523- 1579)	154
XLIII.	Orange-tree planted by St. Dominic (c. A.D. 1200) in Rome	156
XLIV.	Navel Orange. From Ferrarius' <i>Hesperides</i> (1646)	156
XLV.	The Spring. By Botticelli (c. 1486)	168
XLVI.	The Birth of Venus. By Botticelli	168
XLVII.	The Arms of the Medici. Fragment of Painted Ceiling at the Palazzo Pitti, Florence	168
XLVIII.	Jewel Casket of the Medici	168
XLIX.	Jesus in the Garden of Gethsemane. By Duccio di Buoninsegna (c. 1310)	176
L.	Jesus in the Garden of Gethsemane. By Andrea Mantegna (1431-1506)	176
LI.	The Annunciation. By Paolo Veronese (c. 1580)	176
LII.	The Last Supper. By Domenico Ghirlandaio (c. 1490)	176
LIII.	The Descent from the Cross. By Fra Angelico (c. 1436)	176
LIV.	<i>Pietà</i> . By Cosimo Tura (1430-1495)	176
LV.	St. Sebastian. By Liberale da Verona (1451- 1536)	176
LVI.	St. Sebastian. By Dosso Dossi (1480-1542)	176
LVII.	The Annunciation. By Fra Angelico (c. 1439)	178
LVIII.	The Triumph of Death. By Andrea Orcagna (c. 1350)	178
LIX.	The Virgin, Child, and Saints. Italian School, Fourteenth Century	180
LX.	The Virgin, Child, and Saints. By Cima di Conegliano (c. 1498)	180
LXI.	Madonna and Child. By the Pseudo Boccacino (c. 1500)	184
LXII.	The Flight into Egypt. By Sano di Pietro (1405- 1480)	184

PLATES	Inverted at page
LXIII. The "Virgin of Victory." By Andrea Mantegna (1495)	184
LXIV. Madonna, Child, and Saint. By Girolamo dai Libri (1474-1551)	184
LXV. Orange Tree. Wall-painting at the Palace of the Popes at Avignon (Fourteenth Century)	188
LXVI. "The Labours of the Months." Italian silk Embroidery (Seventeenth Century)	188
LXVII. The Parnassus. By Andrea Mantegna	190
LXVIII. Allegory. By Giovanni Bellini (c. 1488)	190
LXIX. Frontispiece of Falda's <i>Giardini di Roma</i> (A.D. 1676)	192
LXX. The Gardens of the Villa Pamfili, Rome, in 1676.	192
LXXI. Orange-house. After Ferrarius (A.D. 1646)	192
LXXII. Orange-house. After Ferrarius (A.D. 1646)	192
LXXIII. Orange-house. After Ferrarius (A.D. 1646)	192
LXXIV. Orange-house. After Ferrarius (A.D. 1646)	192
LXXV. Dining Hall Decoration at the Alcazar in Seville (c. 1560)	192
LXXVI. The Gamblers. By Bartolomé Estéban Murillo (1617-1682)	192
LXXVII. The Lady with the Unicorn. French Tapestry (c. 1490)	200
LXXVIII. Louis XIV's <i>Orangerie</i> at Versailles (c. 1682)	200
LXXIX. Portrait of Mme. de Pompadour. By Boucher (1759)	210
LXXX. Lemons. English Petit-Point Embroidery (Sixteenth Century)	210
LXXXI. Various Citrus Fruits. English Woollen Embroidery (Seventeenth Century)	214
LXXXII. Bronze Orange-tree at Oranienbaum, Germany (1683)	214
LXXXIII. <i>Orangerie</i> at Herrenhausen, Hanover (c. 1680)	216
LXXXIV. <i>Orangerie</i> at Cassel (c. 1705)	216
LXXXV. The Same, Interior View	218
LXXXVI. <i>Orangerie</i> at Fulda (c. 1725)	218
LXXXVII. Fragment from "The Adoration of the Lamb," by Hubert and Jan van Eyck (c. 1430)	222
LXXXVIII. P. P. Rubens: The Painter and his Wife in their Garden in Antwerp (c. 1631)	222
LXXXIX. Portrait of Ernestine Yolande, Wife of John Count of Nassau-Siegen. By J. A. van Ravesteyn (c. 1572-1657)	230
XC. Fruit and Flowers. By David de Heem (1570-1632)	230
XCI. A Typical Jaffa (<i>shamūti</i>) Orange	234
XCII. Arab Woman with " <i>shamāt</i> " (distaff)	234
XCIII. The Banquet of the Gods. Limoges Enamel Dish by de Courteys (c. 1500)	272
XCIV. <i>Scènes de la Vie Seigneuriale</i> . French Tapestry, Early Sixteenth Century	272
XCV. <i>Scènes de la Vie Seigneuriale</i> . French Tapestry, Early Sixteenth Century	272
XCVI. Citron Boxes. Silver. From Germany (Second Half of Eighteenth Century)	288
XCVII. Proclamation of the Senate of Francfort (1671)	288
XCVIII. Lemon Squeezer (Seventeenth Century)	288
XCIX. The Same, Open	288

PLATES		<i>Inserted at page</i>
C.	Carnival of Binche : A Famous Poster	292
CI.	Carnival of Binche : The <i>Gilles</i>	292
CII.	Peace Driving Away the Horrors of War. By P. P. Rubens (1577-1640)	294
CIII.	Nymphs and Satyrs. By P. P. Rubens	294
CIV.	The Fruit-Seller. By F. Snijders (1579-1657) ..	296
CV.	Larder. By A. van Utrecht (1599-1652) ..	296
CVI.	Still Life (Crab and Lemon). By Willem Claesz Heda (1594-1680)	296
CVII.	The Inn. By Jan Steen (1626-1679)	296
CVIII.	Still Life. By Jan Davidsz de Heem (1606-1684)	298
CIX.	Fruit. By Abraham Mignon (1659-1697) ..	298
CX.	Girl with Wineglass. By Jan Vermeer (1632- 1675)	300
CXI.	<i>La Collation</i> . By Pieter de Hooch (1629-1677)	300
CXII.	The Church of St. Clement Danes, London, on "Oranges and Lemons Day"	302
CXIII.	A "Sale by the Candle" Bill of 1776	302
FIGURES		
1.	Assyrian Sculpture : Basket with Citrons (?)	42
2.	Egyptian Painting : Fingered Citron (?)	44
3.	Coin of Simon Maccabaeus	54
4.	Coin of Simon Maccabaeus	54
5.	Jewish Bronze Seal (Roman Period)	63
6.	Jewish Decorated Glass Vase (Roman Period)	63
7.	Bottom of Jewish Gilded Glass Cup (Roman Period)	64
8.	Coin of Antoninus Pius (A.D. 138-161)	74
9.	Coin of Commodus (A.D. 180-192)	74
10.	Coin of Geta (A.D. 198-212)	74

HESPERIDES.

CHAPTER I.

THE HOME OF THE GENUS CITRUS.

IN spite of the remarkable progress achieved in modern times in the study of the origin and geographical distribution of cultivated plants, science until quite recently knew of no method for ascertaining with more than varying degrees of probability the original home where this or that one of our most valuable economic plants first emerged from the wild state and became the subject of man's attention and care, and whence it spread, first to neighbouring, and then to more distant countries. The mere fact that in a particular region a given plant covers large areas, whilst establishing a certain presumption of antiquity does not furnish any absolute indication as to the length of time which has elapsed since the culture of that plant was first taken in hand there:¹ the two principal orange growing countries of the world to-day are Spain and the United States, yet in Spain the first orange-trees were imported from abroad less than a thousand or fifteen hundred, and in the United States less than four hundred years ago. Nor is the occurrence of spontaneously growing specimens, be it even in large numbers, of a plant in a given region to be taken as evidence of its being indigenous thereto;² for the agents which are instrumental in transporting seeds from place to place are many, and not always are they easy to detect or to follow. In Indo-China and the Malay States, in Uruguay and Paraguay,³ citrus seeds are known to have been spread over very wide areas by parrots and other bird amateurs of the fruit; the banks of the Mazoe River in South Africa are lined with lemon-trees derived from seeds carried and distributed by baboons;⁴ in Florida and in Uruguay⁵ whole forests of orange-trees owe their

¹ DV, pp. 5 and 10.

² DV, pp. 6-7.

³ AD, p. 267.

⁴ ER, p. 126.

⁵ AI, p. 20.

origin to fruits carried downstream by the rivers ; and all over the warmer regions of the inhabited globe, man, in the guise of sailor, merchant, or soldier, has been in the distribution of citrus fruits a more potent agent than all the factors of nature taken together. Conclusions derived from peculiarities of human speech are not in any way more reliable. The fact that a plant is described as of a certain country is no evidence of origin : the Romans used the name "*malum persicum*" (Persian apple) for the peach, a fruit of Chinese origin but which they first met in Persia, and "*malum punicum*" (Punic apple) for the pomegranate, with which they first became acquainted in Punic Mauretania (Tunis and Algiers) whither this fruit had been carried, in successive stages, through western Asia and along the North African coast, from Persia and perhaps from regions still further East.⁶ The colloquial names of plants will occasionally provide some indication, but often they are either just descriptive of some striking peculiarity of the plant, in which case they are, as a rule, evidence of foreign importation, or they are obviously absurd and based on *quid pro quos* or other similar errors : thus do the French give the name of "Turkish wheat" (*blé de Turquie*) to maize, which is not a wheat and comes from America, whilst the English call "Jerusalem artichoke" the *Helianthus tuberosus*, a vegetable which is not an artichoke and comes, not from Palestine, but from North America.⁷

But if the area over which a plant is grown within a certain region, or the age of its culture there, or its spontaneous occurrence, or the name given to it, do not enable us to draw altogether reliable conclusions as to the location of its original home, there has, however, in recent years been developed a method of inquiry which has been of invaluable assistance in the identification of the centres of distribution whence many of our important domestic plants have been derived. In studying the cultivated vegetation of the inhabited regions of the world and the history of its distribution, it has been observed that the various agents which are active in the transportation of fruits or seeds from country to country do not act without discrimination. Where wind is the carrier, it

⁶ DV, p. 13.

⁷ DV, p. 16.

will pick up the lighter seeds and leave the heavier ones behind; rivers and sea-currents will only disseminate such varieties whose fruits are light enough to enable them to remain afloat for a long time; whilst the animals, including man, will be guided in their choice either by motives of a purely utilitarian nature—such as the value of the plant as a source of foodstuffs, clothing, or building materials—or by the appeal made to their senses by the particular colour, shape, taste, or fragrance of the flower or the fruit. Where man is the carrier, transportation, following upon discrimination, is itself followed in course of time by deliberately systematic propagation of the preferred variety: amongst horticulturally advanced peoples such propagation will, as a rule, be effected by vegetative methods because plants so raised—that is, from cuttings or from layers—are likely to remain true to the type of the mother-plant, whereas those that are grown from seeds tend to sport, to produce off-type individuals, and to give rise to increasing numbers of new varieties. But, if reproduction by seeds is the rule only where plants grow wild or where horticulture is still in its earliest and most primitive stage, it follows that in order to find the original home of any genus of plants or animals one has to look for the region displaying the maximum number of old-established varieties of the same. Results obtained in this manner are then checked, corrected, or confirmed by determining also the areas of maximum concentration of the largest number of parasites preying especially on that plant; for, the centre of concentration of specialized parasites coincides, as might be expected, with the centre of concentration of their hosts.⁸

By the judicious use of this method it has been found possible to determine in different parts of the globe five world centres where existing forms of all the principal cultivated plants of the temperate climes first originated. These centres are: the mountainous regions of south-eastern Asia; those of south-western Asia; the coasts and islands of the Mediterranean; Abyssinia and the adjacent mountain regions; and Mexico and Peru.⁹ But, in Europe, in Africa, and in America, citrus trees are known

⁸ PM, pp. 148-151.

⁹ PM, pp. 242-243.

to be comparatively recent importations ; so that it is the Asiatic centres only that interest us for the purposes of this study. Now, all citrus varieties are dependent, for their successful flowering and fructification, on rather high mean annual temperatures, whilst frost is their deadliest enemy. At the same time, their water requirements are so heavy that only in regions of very abundant rainfall, well distributed over the various seasons, will spontaneously growing citrus trees find the moisture conditions essential for their welfare. Thus it is that we are naturally led to look for the centre of origin of the genus citrus to that section of the south-eastern Asiatic centre—the mountainous parts of southern China and of north-eastern India—whose sheltered valleys and southward slopes are sufficiently protected from the cold and dry winds of the Mongolian steppes or Himalayan glaciers and yet exposed to the full effect of the warm torrential rains of the summer monsoon.

Oranges, both sour and sweet, have been found wild in Garhwal and Sikkim on the southern slopes of Himalaya, and in the Khasi hills of Assam—the boundary region between India and China¹⁰—where excellent oranges are still grown in large quantities, also in Southern China and in CochinChina.¹¹ Wild citrons, lemons, and limes are found ascending to about 4,000 ft. in the mountain forests of the same districts.¹² *Poncirus trifoliata*, Raf., a very hardy, deciduous relative of the genus *Citrus*, grows wild on hills in North China¹³ and in Japan,¹⁴ and *Citrus maxima*, Meril—the shaddock—a wild parent of the cultivated grapefruit, appears to be at home in the Malay Archipelago. It is, moreover, in this vast region, for which an eminent modern botanist has aptly coined the comprehensive name of “Monsoonian,”¹⁵ that by far the widest range of species and varieties of *Citrus* which can be found anywhere is concentrated. It is to this part of the world, therefore, that we must look for the home of the genus, and in the further course of the present study it will be found that this conclusion derived from direct plant-geographical investigation is

¹⁰ DE, p. 123. HM, pp. 642-643. ¹¹ DV, p. 147. JS, p. 571.

¹² DE, p. 122. AM, p. 16.

¹³ CP, V, p. 2751.

¹⁴ KV, p. 131.

¹⁵ PX.

fully borne out by such historical and other human records as are able to throw any light at all on our subject.

Of all ancient records preserved until this day, in which citrus fruits are mentioned, none go back further than those belonging to the literature of the Chinese people. China proper, that is to say, the south-eastern part of what is known as the Chinese Empire, is separated from the rest of continental Asia by lofty tablelands and rugged mountain ranges which constitute such a formidable barrier to intercourse that, for the larger part of China's historical past, the sea has been the only means of communication between that country and the outside world. For a long time there was not even access to the South China Sea, since the southern provinces of Fu-kien, Kwang-tung—with the city of Canton—and Kwang-si were not joined to the Chinese empire until the second half of the third century B.C. This close isolation, excluding as it did all possibility of introduction of foreign plants—in fact no foreign plants are known to have been imported into China prior to the latter part of the second century B.C.¹⁶—resulted in endowing the Chinese people with a rare capacity for taking the fullest advantage of their native plants; in others words, it led to the Chinese becoming at an early stage of their history very competent horticulturists, whose skill has seldom, if ever, been surpassed by that of any other nation. This talent of theirs was well served by the remarkable wealth in beautiful flowering shrubs and herbaceous plants which is a characteristic feature of the Chinese landscape, as well as by the large number of fruit trees, of which a host of species and varieties developed spontaneously under the influence of the many different climates of that vast empire. As eminently practical people, it was especially to the culture of fruit trees that the Chinese applied their peculiar genius for exploiting to the fullest a quite uncommon knowledge of the biology of plants and of the latter's capacity for responding to man's conscious interference with their natural growth; and, with that fine sense of the beautiful which is innate in the Chinese people, with their inclination to attach symbolical meanings to things—the orange and the “fingered” citron are looked upon by them as

¹⁶ IV, p. 190.

symbols of happiness¹⁷—with their talent for the plastic and the decorative arts, the many species and varieties of flowers and of fruits which the skill of their gardeners brought into existence soon became, under the brush of the Chinese writer or painter or in the hands of the Chinese potter,¹⁸ so many themes for artistic creation. Studied in conjunction with such botanical works as are still extant, Chinese pottery, painting, and poetry provide sufficient materials for the reconstruction of a fairly satisfactory history of citrus fruits in China.

Oranges, shaddocks, and *Poncirus trifoliata* were ranged by the old Chinese authors amongst the wild or "mountain" fruits.¹⁹ This means that the ancient Chinese considered these fruits as indigenous to their country, and in fact they were already found there, both in the wild state and in cultivated forms, several thousand years ago, as is proved by the fact not only that each species or variety bears a different name, but also that most of them are designated by peculiar characters²⁰ and that they are mentioned in the oldest among the still extant Chinese written records.

The very earliest mention of citrus fruits occurs in the *Shu-king*, popularly known as the "Book of History"; it is a collection of old documents brought together and edited, it is believed, by Confucius himself, around 500 B.C., and it constitutes, notwithstanding the fragmentary nature of some of its component parts, our principal source of pre-Confucian history. The oldest documents contained in this collection date back to the twenty-fourth, the youngest to the eighth century B.C.; amongst them, there are certain botanical lists in which mention is made of *kü* (oranges) and *yu* (shaddocks), both of which were then grown in the districts known at present as the provinces of Chekiang, Anhui, and Kiang-si.²¹ *Kü* is to this day the most common name for oranges in China. The same terms are mentioned in another compilation, called the *Rh-ya* or "Literary Expositor," supposed to have been edited by Confucius's disciple Tsu-sia (fifth century B.C.), and part of which was written as far back as the twelfth

¹⁷ GV, p. 98. QI, p. 27.

¹⁹ DG, pp. 4 and 11.

²⁰ DG, p. 11.

¹⁸ GV, p. 216.

²¹ DH, p. 486.

century B.C.;²² Tsu-sia's contemporary, the philosopher Lie-tsz, speaks of the *yu*, the shaddock, as an evergreen tree growing in Chekiang and Hukuang. Another work belonging to the same period, the *Chou-li*—the State Ceremonial of the *Chou* Dynasty (1122-249 B.C.)—informs us, in a paragraph containing instructions addressed to the “makers of bows,” that the wood of the orange tree *kü* is used for manufacturing the body of the bow;²³ the *Chou-li* also contains the curious statement that “when sweet orange trees are made to cross the river Hoaï, and are transplanted to the north they turn into sour orange trees.”²⁴ The poem *Li Sao*, or “Falling into Trouble,” written in 314 B.C. by the poet Ch'ü Yüan, contains a part called *Chü Sung* or “Eulogy of the *chü* Orange,” in which reference is made to the excellent trees of *chü* oranges which were being sent to the Emperor as tribute from the southern provinces, but which would not grow in the north country;²⁵ and Ch'ü Yüan's nephew Sung Yu, also a renowned poet, speaks in one of his prose poems of the “crooked” *chih* (*Poncirus trifoliata*) tree as a place where birds are fond of making their nests.²⁶ The botanist Tsi Han, who lived under the Ts'in dynasty (249-210 B.C.) and wrote a treatise on southern plants, praises the fragrance and the taste of the oranges of the southern province.²⁷ Whether certain varieties of citrus fruits figured amongst the rare plants from the west and south which were transplanted into the botanic garden established by the Emperor Wu Ti in A.D. 111,²⁸ we do not know; but it is highly probable. Oranges are mentioned by Ssu-ma Ch'ien (184-85 B.C.),²⁹ by Li Heng—who lived towards the end of the Han dynasty (about first century A.D.)³⁰—as well as in the writings of P'an Yüeh, the poet, and of Hsieh-Ching, the historian, both of whom belong to the third century A.D. Hsieh-Ching, in his “History of the Later Han,” tells a story about Chang-Pan, a native of Peking and some time

²² DG, p. 49.²³ DH, p. 486.²⁴ DH, p. 312.²⁵ AO, p. 18.²⁶ Communicated by Mr. Tsiang Ping Yan, Director of the Observatory at Tsingtao.²⁷ Communicated by Mr. Tsiang Ping Yan, Director of the Observatory at Tsingtao.²⁸ FN, VI, p. 171.²⁹ AO, p. 9.³⁰ AO, p. 9.

governor of Lukiang (=Salween, a district in Lower Burma), to whom on some special occasion a friendly official in China proper sent a small box containing sweet oranges. The governor's young son, who was then seven years old, went up to the box and helped himself to some of the fruit. Pan promptly took them back and gave them to the people standing outside, who, on receiving the fruit, returned two oranges to the boy; whereupon Pan, getting exceedingly angry, took the fruit once more out of the child's hands and had the people whipped, saying: "Why do you try to bribe my son?"³¹ The little story appears to show that during the third century A.D. sweet oranges were not grown in Burma, and were considered there a present of some importance since they had to be brought all the way from southern China. The term which is used to designate the sweet orange in the story is *kan*, the Chinese name for the loose-skinned orange of the mandarin type, for which, a few centuries later, the district of Wenchow in Chekiang was to become famous. The fourth century calligrapher Wang Hsi-Chih and the poets Hsieh Hui-lien (A.D. 397-433), Chang-Kiu-Ling (A.D. 714-736)—

"At Kiang-Nan in Kiangsu there are little red oranges
which the winter does not kill,

For the air is very mild at Kiang-Nan"—

and Wei Ying-wu (A.D. 740-830) do not mention in their works any other oranges than those of Kiangsu and Hupeh.³² The "Book of the T'ang" tells us that amongst the sweet oranges of Kiang-su the most famous variety was that which was grown at the convent of Nan-leu; fruits of this variety were annually sent to the Emperor as a present from the convent.³³ On the other hand, it is during the fourth century that we find in Chinese writings the earliest description of the citron,³⁴ which therefore appears to have been not a fruit of the country, but a foreign importation; the name of *fo-shu-kan* (Buddha's hand), given by the Chinese to the "fingered" citron, that five-lobed, hand-shaped, and beautifully scented variety which they consider a symbol of happiness,³⁵ and like to place in their dwellings or on their altars in order to fill the air with fragrance,

³¹ MA, p. 22.

³² AO, p. 10.

³³ MA, p. 23.

³⁴ DG, p. 12.

³⁵ QI, p. 27.



Bronze Teapot in form of Buddha-Hand Citrons. Made in Yi-Hsing,
China, Eighteenth Century.
(*British Museum, London.*)



Buddha-Hand Citrons. Coloured Woodcut by an Unknown Chinese Painter
(Probably Seventeenth Century).
(British Museum, London.)

seems to point to an Indian origin; Chinese art abounds in representations of this auspicious fruit (Plates II and III). It was also about the fourth century A.D. that tea became a favourite beverage with the Chinese, and amongst the ingredients required for its preparation, oranges played an important part; the tea-leaves were steamed, crushed in a mortar, made into a cake, and boiled together with rice, ginger, salt, orange-peel, spices, milk, and sometimes onions! A method of which the Russian habit of drinking tea with lemon slices in it may be a survival.³⁶

A short but charming composition on a gift of mandarin oranges written by one Liü Hsün (A.D. 462-521) well illustrates how highly this fruit was prized at the banquet table, perhaps even more on account of its fragrance than for the sake of its taste:

"On the morning of the first frost,
The gardener plucks and presents it;
Its perfume extends to all the seats of the guests;
When opened, its fragrant mist spurts upon the
people."³⁷

It will be noticed that mandarin oranges were picked "on the morning of the first frost," i.e. early in the winter, a practice quite in keeping with the well-known partiality of the Chinese for the fruit of hard varieties, or of immature state. More than any other variety, the "little oranges of Kiang-Nan" (Nankin) in Kiangsu, were famous for their delicate fragrance; women especially were fond of playing with the fruit so as to have their hands scented by it. But their perfume was as ephemeral as it was exquisite, and the great Li-Tai-Po (702-763), contrasting the immortal beauty of his own verses with the evanescent character of scents, warns us in one of his most famous poems, called "The Eternal Characters," that "the scent of the little oranges of Kiang-Nan evaporates if you keep them too long in your hands."³⁸

The growing popularity of the orange, the provision of better means of communication between the central provinces and those to the south, and the resulting expansion of the orange trade, soon led to the creation of large plantations where the fruit was evidently grown for

³⁶ LJ, p. 36.

³⁷ AO, p. 12.

³⁸ PC, p. 98.

commercial purposes. It can only be to such orchards kept for profit that the celebrated Tu-fu (A.D. 712-770)—the man who had such a high opinion of his own poetry that he prescribed it for malarial fever—refers in a poem on "A Garden of Orange Trees":

"In the full of spring on the banks of a river
Two big gardens planted with thousands of orange
trees.
Their thick leaves are putting the clouds to shame,
Over the wealth of their fallen blossoms one walks
without touching the snow."³⁹

Li-Tai-Po and Tu-fu belong to the Golden Age of Chinese poetry, that age in which the beauty of the orange tree and the fragrance of its blossoms and its fruits furnished the poets with the themes for some of their most exquisite verses, none of which exceeds in grace and in depth of feeling the one entitled "The Shadow of an Orange Leaf," by Tin-Tun-Ling (A.D. 772-845):

"Alone, in her room, a young girl embroiders silken
flowers.
Suddenly, she hears a distant flute . . . She trembles.
She thinks a young man is speaking to her of love.
Through the paper window, the shadow of an orange
leaf comes and settles on her knees . . . She closes
her eyes,
She thinks a hand is tearing her dress."⁴⁰

About a century later, we have the first written evidence by non-Chinese writers of the presence of citrus fruits in China. In the description of things seen in India and China, which is embodied in a work called *Salsalat-al-tawârikh* (Chain of Chronicles), the Iraqi merchant-traveller Abu-Zeyd Hassan, a native of Syraf on the Persian Gulf, has left a list of the fruits grown by the Chinese; amongst them occurs the name of *utruj*, which the French editor of the text renders as "the citron."⁴¹ It is, however, to be noted that this term *utruj* is not only the Arabic name for the *citron*, but is also the term commonly used by Arab writers throughout the early Middle Ages to designate the

³⁹ Communicated by Mr. Tsiang Ping Yan, Director of the Observatory at Tsingtao.

⁴⁰ PC, p. 92.

⁴¹ MO, I, p. 22.

genus *citrus*; so that when Abu-Zeyd mentions the *utruj* amongst the fruits of China, but does not mention oranges or lemons, there can be no doubt that in his mind the term *utruj* comprised not only the citron, but also oranges, shaddocks, lemons, and possibly other species or varieties.

The making of wine from oranges is first referred to by the brilliant poet and writer of fascinating essays, Su Tung-p'o (A.D. 1031-1101), in his rhythmic prose-poem "Spring-coloured Wine of Tung-T'ing (Tung-T'ing is an island in the midst of Lake T'ai, in the orange-growing district of Chen-tse, Kiangsu), where he describes the gathering of sweet oranges in order to make from them a wine which, he says, "is worthy of turquoise ladles, silver flacons, purple gauze, and green silk wrappers."⁴²

"A thousand yellow-headed slaves," is the charming term coined by Su-Tung-p'o to designate the orange gardens of the rich. The dynasty of the Sing, under which Su Tung-p'o lived, coincides with the Golden Age not only of Chinese poetry, but also of the arts of painting and of gardening, and amongst the most highly prized points of attraction in the gardens of the wealthy Chinese, small orange orchards occupied a favourite place. Yet of these gardens, praised by many writers, no detailed description has been preserved prior to the poem, dated A.D. 1026, in which Hsi-Ma-kuang, statesman and philanthropist, portrays his own country-seat:

"Spring never deserts this delicious place. A small forest of pomegranates, citrons and oranges, always covered with flowers and fruits, limits the horizon. In the midst of it stands on a low hill a green pavilion towards which a spiral pathway winds up in ever closer volutes."⁴³

Just as, in Europe, several centuries later, the growing perfection of the art of gardening, and the emergence of orange, citron, and lemon trees as motifs for garden architecture, led to the publication of treatises on the culture of these trees, so in China during the Golden Age of decorative arts—in the twelfth century A.D.—a general desire for reliable information on the botany of the different varieties of citrus trees and on the art of raising them led a number of writers to devote their special attention to these

⁴² AO, p. 15. The purple gauze, for straining.

⁴³ GU, pp. 327, 329, 330.

matters. A voluminous compilation of medico-botanical extracts from upwards of 800 ancient authors,⁴⁴ published under the name of *Pen-ts'ao kan mu* towards the close of the sixteenth century, after discussing under the term of *chü* (i.e., oranges), the general subject of citrus fruits, describes in detail five species:⁴⁵ the *kan* (*Citrus nobilis*, Lour., the loose-skinned King and tangerine or mandarine orange), the *ch'eng* (*Citrus sinensis*, Osbeck, the tight-skinned orange of the common type), the *yu* (*Citrus maxima*, Meril, the shaddock), the *kou yüan* (*Citrus medica*, L., the citron), and the *ching-chü* (*Fortunella*, the kumquat or golden orange). The latter is a dwarf variety, grown in pots, and when the little tree is covered with its oranges still green or just beginning to turn yellow, it is used as a present to friends and guests; hence its alternative name of *chi k'o ch'eng*, "give-guest orange."⁴⁶ All these citrus fruits are listed in the *Pen ts'ao kan mu* under the chapter "Wild or mountain fruits," which seems to show that they were considered to be indigenous to, or at least long acclimatised in, the country; as the lemon is not mentioned in the list, we may conclude that it was either not grown at all in China proper, or that it was looked upon as a foreign plant but lately introduced.

The *Pen ts'ao kan mu* refers repeatedly to the *Chü lu* (A Monograph of Citrus)⁴⁷ composed in A.D. 1178, by *Han Yen-chih*, who was at the time prefect of the town of Wen-chou in the province of Chekiang. It is the most important of all Chinese works on citrus fruits, and also the oldest existing book on the orange in any language. Although by its title it seems to envisage oranges of different sorts, the author treats mainly of the loose-skinned mandarin oranges of Wen-chou, the best of which were grown in the famous Ni-shan groves. "I am," he says in his introduction, "a native of the North and throughout my life I have regretted not having seen any orange blossoms. At different times I bought oranges from boatmen, but never obtained the good ones. How could I obtain the so-called 'Ni-shan' oranges and eat them? Last autumn I came here as a state official and had the good fortune to see the orange blossoms and moreover to eat of the fruit. But there is a precedent that

⁴⁴ DG, p. 2.⁴⁶ OE, p. 115.⁴⁵ OE, p. 111.⁴⁷ BH, p. 5.

no official shall go out of the city for a long distance, and so I had no excuse to go as a guest to the fragrant groves of Ni-shan and drink wine at that place.⁴⁸ . . . It is the custom for the Prefect of Wen-chou to invite many guests to a banquet which is usually a fine affair, and held annually, during the autumn season. In a poem written at one of these banquets by the former prefect, named Li, the following two lines occur:

Artlessly the white birds rush against the sides of the boat,

While the yellow oranges heaped upon the table spurt their fragrance upon the hands."⁴⁹

It is from Han Yen-Chih that we learn something about the sundry uses to which the fruits of the different varieties of orange-trees were put by the Chinese. Speaking of a certain sour orange called *ch'eng tzu*, he says that "people like to handle this fruit and enjoy it. Because of its penetrating odour it is used for scenting clothing, or for seasoning vegetables, and it is also preserved in honey."⁵⁰ The people of the district of Hêng-yang, "after drinking wine take a pair of scissors and cut slices of another sour variety called *hsiang yuan*, or Fragrant Globe, which has a flavour equal to that of the fresh *ch'eng* orange."⁵¹ Of the *chu-luan*, also an orange, we learn that "the villagers gather its blossoms and distill a perfume from them."⁵² The blossoms of the *chu luan* are much larger than those of the *kan* or *chü* and are also more fragrant, and for this reason they are selected for use in making incense " (here follows a detailed prescription for the preparation of the latter). . . . "The incense powder is then dried and placed in a jar and sealed hermetically. When this incense is burned the fragrant odour is the same as that obtained while sitting under the trees in a *kan* grove."⁵³ About the *kumquat-chin kan* or golden *kan* orange he tells us that "these fruits are eaten without peeling off their golden coats. When preserved in honey the flavour is still better. . . . At first people of the capital did not value them very highly, but subsequently, owing to the Empress Wen Ch'eng—the wife of the Emperor Yen-Tsung, of the Sung dynasty (A.D. 1023-

⁴⁸ AO, p. 10.

⁵¹ AO, p. 27.

⁴⁹ AO, p. 13.

⁵² AO, p. 26.

⁵⁰ AO, p. 17.

⁵³ AO, p. 32.

1064)—having manifested a liking for the fruit, it became popular and expensive at the capital.”⁵⁴

Han Yen-Chih's book treats at length of the various methods of propagating the orange tree, of cultivating it, of picking, packing, and transporting the fruit. Some of the methods and theories which he records sound very queer to modern ears, as when he says that the fruit will not keep if it is picked by people who have drunk wine on the same day.⁵⁵ Yet many of his instructions are valid even now, and they provide striking evidence of the high level to which the art of the Chinese horticulturists had attained in Han Yen-Chih's time. Some of the fruits were gathered before they had turned yellow; and “the boats carry loads of these throughout Kiansu and Chekiang provinces.”⁵⁶ Of another variety, of very large size and thick red-coloured skin, which is called *hai hung kan*, we hear that “the longer the fruit is kept the sweeter it becomes . . . This variety of oranges may be sent long distances. The oranges which are piled up nowadays at the capital on the sides of the roads are chiefly of this kind.”⁵⁷ It appears, therefore, that in twelfth-century China, the trade in oranges was already well organized throughout the eastern and southern provinces of the Empire and had assumed a certain importance. This was not due only to the popularity of the orange as a fruit to be eaten: the peel itself of all varieties of citrus fruits was, and still is to this day, an important article of commerce throughout China. Very little of it is thrown away; servants, children, rag-pickers, and others gather it up, dry it and sell it to the druggists, who use enormous quantities of it in the preparation of medicines. For the peel of citrus fruits is regarded by the Chinese doctors as a panacea for all sorts of ills including fish and lobster poisoning, pin worms, and cancer of the breast; it is administered both in pill and decoction, together with ginger and other carminatives.⁵⁸

We have said before that the presence of mountain ranges in the North-west, West, and South-west placed serious obstacles in the way of intercourse between China proper and the rest of continental Asia, so that for a very long time the sea provided the sole connection between China and the outer world as represented by Japan, the Philippine Islands,

⁵⁴ AO, p. 16.

⁵⁵ AO, p. 31.

⁵⁶ AO, p. 31.

⁵⁷ AO, pp. 14-15.

⁵⁸ OE, p. 112.

the Malay Archipelago, and the eastern coast of Indo-China. How did these conditions affect China's relations with foreign countries, and what was their influence upon the spread of Chinese citrus fruits abroad? We shall deal first with Japan, the climate and civilization of which present many analogies with those of China itself.

Japan is emphatically a wet country; its average yearly rainfall is about 1,570 millimetres. This, together with a rich soil, a high mean annual temperature, and the mild winters—frost being practically unknown in the southern Japanese islands—make these districts eminently suitable for intensive horticulture and in particular for the growing of citrus trees and the production of high-quality fruit.⁵⁹ Moreover, several chains of islands, which link Japan to different parts of the Asiatic continent, have constituted since the remotest times so many bridges across which successive waves of immigration have carried new elements of population, new domestic animals, and new plants. No wonder, therefore, that the Japanese are great lovers of flowers, trees, and plant life generally; in the tints of the foliage in autumn, in the glory of flowering trees in spring, Japanese literature and art have for centuries been finding ever new sources of inspiration.

From Kiu-Shiu—the southernmost of the four great islands which constitute the main body of the Japanese Empire—the island group of Lu-tchu extends crescent-wise towards the South-west until close to the island of Formosa, opposite the coasts of the Chinese provinces of Fu-kiang, Kwang-tung and Chekiang; thus, through the Lu-tchu Islands and Formosa, Japan stands in easy connection with that precise part of China where the best oranges are grown. Japanese legends have preserved the memory of a Chinese mission which, having been sent out some time during the third century B.C. in quest of the fabulous island of Horiä, where Paradise was believed to be situated, discovered Japan and founded there a colony.⁶⁰ The first historical relations between Japan and China go back to the year A.D. 57 when a Japanese ambassador visited the continent; but the Chinese do not seem to have had any real knowledge of their eastern neighbours until the third century A.D. in the course of which Japan adopted the Chinese script.

⁵⁹ NN, p. 479.

⁶⁰ MU, p. 166.

During the fifth and sixth centuries A.D. several immigrations of Chinese settlers are known to have taken place; they were soon to be followed by the wholesale introduction of Chinese civilization, through the agency of priests and scholars who began to stream in numbers from China to Japan when, during the second half of the sixth century, the latter country adopted the religion of the Buddha.

When and how citrus fruits were first introduced into Japan—if indeed there are none that are indigenous there—we shall hardly ever know with certainty, since the earliest Japanese book now extant, the *Kojiki* or “Book of Ancient Things,” does not date back further than A.D. 712. Yet there can be no doubt that oranges, both sour and sweet, have been grown there from very ancient times. In the Hochusan district near Suchow, in the Chinese province of Kiangsu, there is a variety of sour oranges called *dai-dai*, which is particularly valued for its fragrant flowers and fruit; the flowers are used to flavour Chinese tea, while the ornamental fruits are esteemed for their medicinal qualities. Japan also has a sour orange called *dai-dai*, and in the Japanese language of symbolism this name has a twofold meaning: on the one hand it is used as an allusion to the Chinese, on the other hand it stands for “for generations unto generations.”⁶¹

But the orange which is most widely grown in Japan is the so-called *tachibana*, a loose-skinned mandarin akin to the southern-Chinese *kan*. It is a tree whose comparatively small size and very compact crown enable it to stand up successfully against the strong winds that blow throughout Japan at all times of the year. The name *citrus nobilis*, by which the species is known scientifically to-day, well fits the delicate and refined beauty of the mandarin tree when in bloom; to a flower-loving people like the Japanese it made a strong appeal, which found expression in their legends, poetry and art as far as these can be traced back. The *Kojiki*, mentioned before as having appeared in A.D. 712, preserves, in its second book, the legendary story of Prince Jimmu, whose principal wife, the “august Princess Ote-tachibana”—literally, Younger-Daughter Mandarin Tree—threw herself into the sea, as a sacrifice in order to calm the storm which had overtaken her husband on a sea voyage;

⁶¹ IG, p. 244.

an event which, according to tradition, is supposed to have happened about the first century A.D.⁶² The *Kojiki*,⁶³ as well as the *Nihongi* (*Chronicles of Japan*) which are believed to have been compiled in 720, relate that the Emperor Suinin, who reigned during the first century A.D., commanded one Tajima-mori to go to "the Eternal Land" (China or the Lu-tchu Islands), and fetch from there plants or cuttings of *tachibana* trees, and that "on the twelfth day of the third month of the following year, Tajima-mori returned from the Eternal Land, bringing of the fragrant fruit that grows out of season, eight sticks and eight bundles."⁶⁴ From very old times, a *tachibana* tree has been planted in the courtyard of the Sishin-den (the Ceremonial pavilion) and also in the courtyard of the Taikyoko-den (the Great Hall of State) of Kyoto.

In Japanese poetry the *tachibana* tree is often found associated with the cuckoo, the reason being that the season during which the bird's song is at its best is that of the blossoming of the mandarin-tree. One of the earliest of such instances occurs in an anthology called the *Manyōshū* or "Collection of a Myriad Leaves," compiled during the eighth century A.D., which contains the following anonymous poem apparently written long before that date (in the English translation the word "orange" stands for the Japanese *tachibana*):

ODE TO THE CUCKOO.⁶⁵

Nightingales built their nest
Where, as a lonely guest,
First thy young head did rest
Cuckoo so dear!

⁶² MU, p. 73.

⁶³ "The Translation of 'KO-JI-KI,' or the Records of Ancient Matters," by Basil Thomas Chamberlain. Published through the Asiatic Society of Japan, Tokyo: by J. L. Thompson and Co., Ltd., Kobe, 1932, Vol. II, Section LXXIV, pp. 240-241.

⁶⁴ In a letter to "The Times," dated in January, 1931, a Japanese correspondent wrote that, in commemoration of this event, a statue to the memory of Tajima-mori was erected in the burial-ground at Fukuchoji, where it still stands, some 1800 years old.

⁶⁵ EB, p. 94.

Strange to the father bird,
 Strange to the mother bird,
 Sounded the note they heard
 Tender and clear.

Fleeing thy natal bow'rs
 Bright with the silv'ry flow'rs,
 Oft in the summer hours
 Hither thou fliest;
 Light'st on some orange tall,
 Scattering the blossoms all,
 And, while around they fall,
 Ceaselessly criest.

Though through the livelong day
 Soundeth thy roundelay,
 Never its accents may
 Pall on mine ear:
 Come, take a bribe of me!
 Ne'er to far regions flee;
 Dwell on mine orange-tree,
 Cuckoo so dear!

In another poem, also preserved in the *Manyoshu*, the Princess Awata writes:

I will go home after the moon comes up,
 Then she will shine

Upon the bright tachibana-flowers stuck in my hair.⁶⁶

Lemons are first mentioned in a text which shows that the taste and skill, which the Japanese display in making the most of flowers and fruit in beautifying their dwellings, was already as highly developed a thousand years ago as it is to-day. In her memories, entitled *Kagero Nikki* or "Gossamer Diary," the anonymous noble mistress of the great statesman Fujiwara no Kane-iye (A.D. 929-993), relates how, one day, her attendants having brought her some meadow-sweet which they had found growing near a pond, she "put the flowers in a bowl along with some lemons on stripped stems; it really looked very pretty."⁶⁷ The use of orange blossom perfume for scenting clothes is referred to

⁶⁶ Communicated by Colonel D. M. F. Hoysted.

⁶⁷ KY, p. 27.

in the diary of another court-lady, the poetess Izumi Shikibu, where, inserted in the account of a love affair which she had in 1002-1003, we find the following melancholic verses:

The scent of tachibana flowers in May
Recalls the perfumed sleeves of him who is no longer
here.

That scent, indeed, brings memories,
But rather, to be reminded of that other,
Would hear the cuckoo's voice.⁶⁸

Citrus fruits have at different times and by different nations been associated with love: the Jews in Roman times used citrons to adorn the bridal chamber, and Ronsard the great poet of the French Renaissance, wrote: "*Oranges et citrons sont symboles d'Amour.*" It is curious to find the same belief or custom in Japan. In that masterpiece of one of the greatest novel writers of all times, the "*Tale of Genji*" by the Lady Murasaki (c. A.D. 978-1031), Prince Genji, the hero of the story, sends a present with a symbolic meaning to his ward, the Lady Tamakatsura, whom he once loved and for whom he still feels more than simple friendship, but whom he married to a nobleman of the Court. "He happened to notice that there were a lot of eggs in the pigeon-house, and arranging them prettily in a basket along with oranges and lemons, he sent it as a present to Tamakatsura, not with any very definite intention"; but there is a hint that the lady is shut away in her husband's castle like a tiny bird in a cage.⁶⁹

At Konejime, a townlet on Kiushiu, the southernmost of the Japanese islands, there is a place called Tachibana-yama, or orangehill. The name is obviously derived from a very ancient orange grove planted on the hillside. Towards the close of the sixteenth century the then ruler of the country, one Shigenaga Nejime, had been beaten in battle and superseded by the head of the rival family of Shimadzu, of the neighbouring district of Kagoshima. It is recorded that Yoshihisa Shimadzu, who had visited the place in 1610, wrote a poem entitled "At the place where Shigenaga planted the orange of Wen Chou fu, this poem is composed."⁷⁰ But the oldest reference, in Japanese

⁶⁸ EX, p. 150.

⁶⁹ KZ, p. 85.

⁷⁰ BH, p. 8.

literature, to the orange of Wen Chou is probably that which occurs in the "Isei Teikin Orai," a book of family letter writing composed by Kokwan (1278-1346).⁷¹

I have mentioned before that the intercourse between the old Chinese Empire and the rest of continental Asia was rendered extremely difficult on account of the presence of mountain chains, especially along the western and south-western borders of the Empire. Yet, however serious these obstacles may have been, with the gradual advance of technical progress in China, with the increasing skill in matters of administration and war, a growing desire for expansion led the Chinese people in course of time to turn or to surmount such obstacles as nature had placed in its way. Expansion was naturally easiest along the western shore of the South China Sea, from the southernmost Chinese provinces of Kwang-tung and Kwang-si along the narrow maritime plains of Tonking, Annam, and Cochin-China; but it is also true that from remote ages the particular form of primitive trade called silent barter is known to have been practised across the formidable passes which led over the mountains that separate the Chinese provinces of Yun-nan from the fertile valleys of upper Burma and Assam. Whether in this manner citrus fruits indigenous to southern China were passed on to the Indo-Chinese Peninsula, or whether some of them were indigenous there as well as in China itself, there can be no doubt that oranges, mandarins, and shaddocks have been grown in Indo-China since very early times; so much so that several botanists who specialized in the flora of these countries did not hesitate to consider Cochin-China, the southernmost region of the Indo-Chinese Peninsula, as being part of the original home of at least the shaddock and the mandarin.

That maritime intercourse between Indo-China and China itself took place long before the Christian era is probable, but cannot be proved. From Chinese records of the third century A.D. we learn that Chinese merchants often came to Tongkin, Annam, Cambodia and Siam;⁷² and since the Chinese merchants and sailors no doubt took with them on their voyages the fruits to which they were accustomed in their home country, it is easy to understand how—in an age when on account of the small size of ships

⁷¹ BH, pp. 9-10.

⁷² PZ, p. 131.

sea-navigation was still to a large extent a question of following the coast lines and putting in, whenever the weather looked doubtful, into the first harbour that was considered safe—the fruits and seeds of citrus trees were spread along the shores of the South-China Sea, the Java Sea, and the Straits of Malacca. The migration of Chinese plants to foreign countries, including Indo-China, must have been particularly active during the seventh century A.D., in the reign of the emperor T'ai Tsung (627-650), who welcomed to his Court and made permanent provision for scholars of all nations, a policy which led to Annamese, Japanese, and other monks and scholars flocking to his capital to acquire Chinese culture, and ultimately spreading it all over the Far East.⁷³

The connection between China and farther India became still closer when the Mongol Emperor Khubilai Khan (A.D. 1216-1296) conquered Annam and Siam as well as Burma, and turned them, for a century or so, into provinces of the Chinese Empire.⁷⁴ The sea-borne trade of Indo-China seems to have been at the time a *de facto* monopoly of the Chinese.⁷⁵ No wonder that to this day in Siam, in Cochin-China, and throughout the eastern part of the Peninsula, if the dominant religion is Buddhism the culture of the people in its more material aspects has remained definitely Chinese,⁷⁶ and that the citrus species and varieties of Indo-China are very much the same as those of South China.

It is quite a different picture that unfolds itself before our eyes when we come to deal with the citrus fruits of India. If in China, Japan, and Indo-China, oranges and shaddocks are the citrus fruits most commonly grown, in India it is the citron, the lemon, and the lime that predominate; this is true for the wild varieties as well as for those that are cultivated. The citron has been found wild by Wight⁷⁷ in the Nilgiri hills in the southern part of the peninsula; Roxburgh has identified it in the Garo hills of Assam⁷⁸ and others in the Khasia hills, also of Assam, and in the region of Kumaon.⁷⁹ Wild lemons and sour limes have been discovered⁸⁰ by Royle, Brandis and Sir Joseph

⁷³ OF, p. 28.⁷⁴ OF, p. 46.⁷⁵ HL, II, p. 151.⁷⁶ MP, p. 39.⁷⁷ DV, p. 142.⁷⁸ ND, III, p. 392.⁷⁹ QB, p. 325.⁸⁰ DV, p. 142.

Hooker in the warm valleys at the foot of the Himalayas, from Garhwal and Sikkim in the North-west to Burma in the East, also in the western Ghats south of Bombay and on the Satpura range north of that same city. "In view of this," wrote de Candolle, "there is no room for doubt that the species is of Indian origin, and even in different forms, the antiquity of which loses itself in the night of prehistoric times. I doubt that their home extends as far as China or the islands of the Asiatic Archipelago."⁸¹ Wild sweet limes have been found only by one authority, namely Wight,⁸² who reports having seen them in the Nilgiri hills in the southernmost part of the Peninsula.

Sour oranges are not reported to have been met with by either Roxburgh, Royle, Griffith, or Wight, who were the first to explore the Indian flora; but Sir Joseph Hooker (*Flora of British India*, I, p. 515)⁸³ met them growing—in his opinion, spontaneously—in several of the jungles along the lower mountain slopes to the south of the Himalayas, from Garhwal and Sikkim to the Khasia hills. It is however possible that these were not really wild, but only fully acclimatised; besides, they are said to be botanically nearer the sweet than the sour orange.⁸⁴

As to sweet oranges, these have been found growing on apparently wild trees in Garhwal and Sikkim, in the Nilgiri hills (Royle, *Illustrated Himalaya*, p. 160),⁸⁵ as well as in the Khasia country where the valleys are still producing plenty of excellent oranges.⁸⁶ The fact, however, that it is through this latter district only that overland traffic between China and India appears to have taken place since comparatively remote times would rather point to these so-called wild sweet oranges being the result of importations from southern China in some distant past.

What information can be obtained from the language of the country?⁸⁷ The Sanskrit language has no name at all for the shaddock; until a time corresponding roughly

⁸¹ DV, p. 142.

⁸² DV, p. 142.

⁸³ DV, p. 147.

⁸⁴ QB, p. 320.

⁸⁵ DV, p. 147.

⁸⁶ HM, pp. 642-643.

⁸⁷ The following data on Sanskrit terminology have been extracted from two memoranda which have been specially prepared for the author by Mr. Subrahmanya Sastri, Sanskrit Librarian of the National Siamese Library of Bangkok, thanks to the kind intervention of Professor G. Coedès, General Secretary of the Bangkok Royal Institute.

to the beginning of the Christian era, Sanskrit literature, as far as it is preserved, makes no mention of oranges either, and knows only the citron and the lemon. The name applied to these is *jambila*. This appears to be the oldest citrus term on record, and occurs in the *Vajasaneyi samhita*, a collection of devotional texts which has been assigned to a period anterior to 800 B.C., and forms part of the Brahmin sacred book called the *White Yajur-veda*. It has been suggested that this term *jambila* may have given rise to "Jambala" which is one of the names of Kuvera, the son of an ancient sage, whom Brahma, to reward him for a thousand years' continued practice of austerity, made immortal and appointed god of Wealth and guardian of all the treasures of the earth; Kuvera is usually portrayed carrying as his symbols a citron and a mongoose vomiting jewels⁸⁸ (Plates IV and V).

Names for oranges appear for the first time in the 27th chapter of the first book of what is supposed to be the oldest existing medical work in the Sanskrit language, namely the *Charaka-Samhita*, a bulky treatise attributed to Charaka who, according to tradition, was court physician to King Kanishka (about A.D. 100); but it may be a few centuries older. The names used, in this work, for the different citrus fruits are: *nāranga* and *airāvata* for the orange both sour and sweet, *phalapūra*, *rucaka*, and *matulungaka* for the citron, and *jambira* for the lemon and the lime. And in a somewhat more modern—probably fourth century A.D.—treatise, the *Susrutha-samhita*, which the author, Susrutha, is said to have received from Dhanvantari, the Indian god of medicine, we find the term *danta-satha* for the lemon and the lime, and *bijapura* for the citron. Sanskrit names that begin with *nār* generally denote fragrance,⁸⁹ and this may be at the origin of the term *nāranga* for orange; in later times when oranges were passed on by the Hindus to other nations, the Sanskrit *nāranga* became the Persian *nāranj* which the Arabs took over and carried to the Mediterranean, where it gave birth in turn to the Spanish *naranja*, the Portuguese *laranja*, the Italian *naranzia*, *narancia*, and *arancio*, the Byzantine *nerantsion*, the neo-Latin *arangium*, *arantium*, *aurantium*, and the French *orange*, *airange*, and ultimately *orange*.

⁸⁸ GN, pp. 139-140.

⁸⁹ QB, p. 320; AD, p. 216.

Similarly the Sanskrit term *matulungaka*, for citron, or rather its abbreviated form *matulunga*, which also occurs, was turned by the Persians into *turunj*,⁹⁰ by the ancient Jews into *atranga* and *etrog*, by the Arabs into *trunj* and *utruj*, and by the Catalans in northern Spain into *taronja*.⁹¹

The information to be gathered from Indian art with regard to the history of citrus fruits in that country amounts to very little indeed. Apart from occasional sculptures portraying the god Kuvera carrying his symbolical citron, the only representations of citrus fruits which have come to my knowledge are the beautiful pictures of citrons that are to be seen in the famous cave-hermitages and halls cut into the precipitous bank of a ravine near Ajanta, a village in the dominions of the Nizam of Hyderabad. These caves, the only surviving evidence of early pictorial art in India, are of different dates, varying from about 200 B.C. to the seventh century A.D. Most of their interior walls are covered with frescoes, the cave designated as number one being especially noteworthy for its marvellous paintings which have been described as "an example of the highest standard of Buddhist art in India, a standard so high that it has scarcely, if ever, been surpassed."⁹² Not the least remarkable feature of this cave is the decoration of the polychrome imitation coffered-wood ceiling, whose illuminated panels represent different scenes or episodes from the life of the Buddha in previous incarnations, alternating with pictures of flowers and fruits. On three at least of these panels, citrons are unmistakably recognizable;⁹³ they are of quite normal type and shape (Plate VI panel 2b, and Plate VII panel 3h), and do not any way resemble the five-lobed monstrosity called "Buddha-finger citron."

Turning to the cultivated forms of citrus fruits, we find that lemons are grown all over India, yet not in the gardens of the people generally, but rather of the well-to-do and curious;⁹⁴ limes are much more common. The Persian geographer, Abu Ishaq al-Farsi al-Istakhri, in his "Book of

⁹⁰ IV, p. 301, footnote 6, and pp. 580-581.

⁹¹ BP, III, p. 1227.

⁹² EW, p. 182.

⁹³ GS, plates LX-LXXI. EW, facing p. 185, upper picture, counting from left to right, 2nd and 4th panel in upper row and 1st panel in lower row.

⁹⁴ QB, p. 325.



The God Kuvera with Citron, and Mongoose Vomiting Jewels. Copper Gilt.
Statue from Tibet (Nineteenth Century).
(Victoria and Albert Museum, London.)

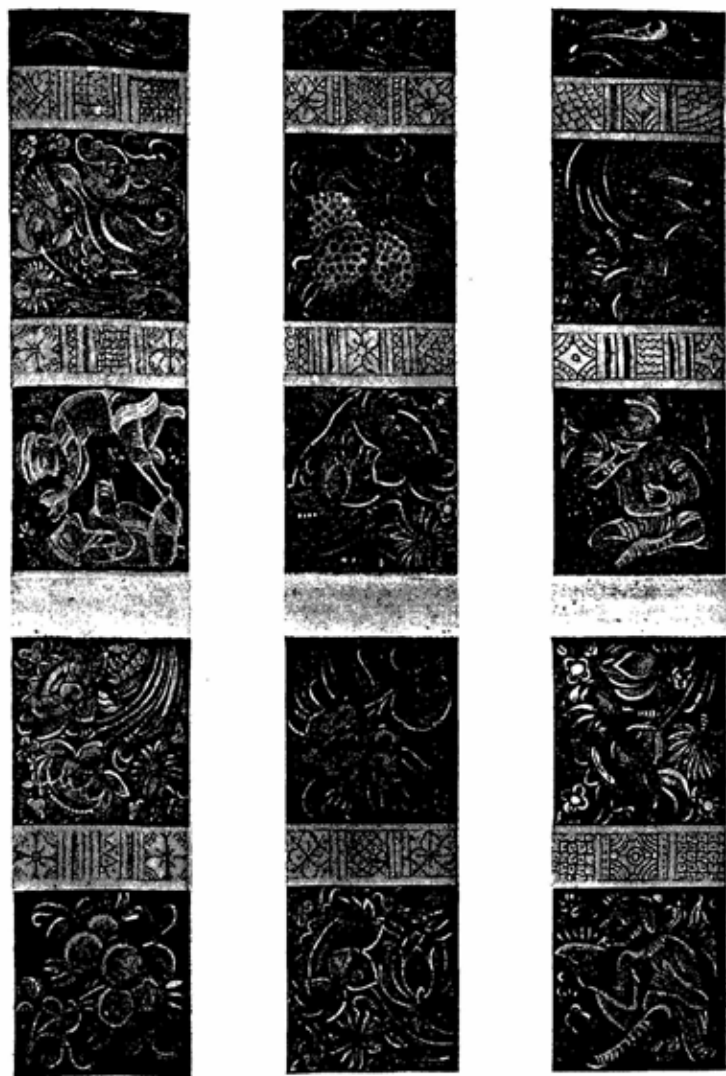


The God Kuvera with Citron, and Mongoose Vomiting Jewels. Part of a Painted Temple-Picture from Tibet (Sixteenth Century).

(Victoria and Albert Museum, London.)



Painted Ceiling. Ajanta Caves.



Painted Ceiling. Ajanta Caves.

the Countries" (c. A.D. 950), mentions lemons (or limes?) grown at Mansuriah in the Punjab;⁹⁵ but the actual wording gives the impression that the fruit in question was unknown to him before: "In the country around there are to be found fruits of the size of an apple, which are called *limûn* and which are very acid." This passage of al-Istakhri's "Book of the Countries" was evidently before the eyes of Idrisi (al-Sharif al-Idrisi) the Moroccan (A.D. 1153) when, in describing Mansuriah in his "Geography," he mentioned there "a fruit as big as an apple, which is named *limûna*, the taste of which is very acid."⁹⁶ And Friar Jordanus, the French dominican missionary and explorer—for some time Bishop of Malabar in southern Hindustan—and author of the justly celebrated "*Mirabilia Descripta*" (c. A.D. 1330), the best account of the fauna and flora of India given by any European in the Middle Ages, records: "I will only say this much, that this India, as regards fruit and other things, is entirely different from Christendom; except indeed that there be lemons in some places, as sweet as sugar, whilst there be other lemons sour like ours."⁹⁷ The reference appears to be to limes rather than to lemons; and this is true as well with regard to the "limons" of Ceylon mentioned by Sir John Maundeville (c. 1336). On that island he describes a lake at the bottom of which "are found many precious stones and great pearls. In that lake grow many reeds and great canes, and there within are many cockodrills and serpents, and great water leeches. And the king of that country, once every year, gives leave to poor men to go into the lake to gather precious stones and pearls, by way of alms, for the love of God, that made Adam. To guard against the vermin they anoint their arms, thighs, and legs with an ointment made of a thing called limons, which is a kind of fruit like small pease, and then they have no dread of cockodrills, or other venomous things."⁹⁸

In a letter written from India in 1623, the celebrated Italian traveller Piero della Valle describes the custom, observed by him at Ikkeri, according to which Brahmin widows, during the short interval between the death of their husbands and their own self-immolation on the

⁹⁵ IA, p. 83, quoted by KN, III, p. 282.

⁹⁶ FL, I, p. 162.

⁹⁷ IH, p. 15.

⁹⁸ KH, p. 227.

ceremonial pyre, were required to ride once every day around the city, their face uncovered, and holding a mirror in one hand and a lemon (*limone*) in the other;⁹⁹ here, too the reference is probably to a lime, and not to a lemon.

The shaddock, although to-day quite a common fruit in India and Burma but especially in Bengal and southern Hindustan,¹⁰⁰ is probably not indigenous, but a comparatively recent importation from the Malay Archipelago, as is shown by the names by which it is known in the various parts of India. In Bengal it is called *batāvi nimbu*, i.e. *Citrus Bataviana*;¹⁰¹ whilst in other parts of India it is called *pumpalinas*, *bambulinas*, *bombarimasa*, *pampara-panasa*, all of which are evidently corruptions of the Malay *pumpulmas*.¹⁰² The acclimatization of this fruit in India must have been effected only a very few centuries ago since we do not find it listed amongst the nine different kinds of Citrus described in the Mogul Emperor Baber's fascinating memoirs (A.D. 1519), which are one of the principal and most reliable sources for the history of his time;¹⁰³ nor is it mentioned in the "Ain-i-Akbar," written in 1590.¹⁰⁴

With regard to the orange we have already seen that until about the beginning of the Christian era there was no name for this fruit in the language of the country: oranges therefore were most probably not indigenous to India, and can only have been imported from China. What route did they follow in their peregrinations? There were, of course, four possible alternatives: (1) across the high passes which lead over the mountain ranges separating the basin of the river Yangtze, on the Chinese, from the Assam valley, on the Indian side; (2) through Thibet and the eastern Himalaya valleys; (3) by the long roundabout route from western China, through Chinese Turkestan, the highlands of Pamir, and Afghanistan, into the Upper Indus region; and (4) by the sea-route through the Malay Archipelago and the Straits of Malacca.

The first of these routes was beset with formidable obstacles: snow-clad mountain ranges, swift unnavigable rivers, dense jungle, and a troublesome climate.¹⁰⁵ Yet in spite of these difficulties, it is generally admitted that a

⁹⁹ PH, p. 198.

¹⁰² HM, p. 722.

¹⁰⁰ QB, p. 324.

¹⁰³ CN,

¹⁰⁵ PY, p. 219.

¹⁰¹ HM, p. 721.

¹⁰⁴ QB, p. 319.

number of other Chinese plants have very probably passed along this route westward into Hindustan, and it may therefore just as well have happened for at least some varieties of oranges.¹⁰⁶ The route through Thibet was so long and difficult as to make it hardly probable that importation occurred along its course. As to the round-about route from China proper past the Great Wall, through desert countries and through the steppes of Chinese Turkestan, then over Karakorum and through the Peshawar valley—the 6,000 miles road followed by Chinese Buddhist monks in their pilgrimages to India—this did not constitute an easy avenue for the importation of bulky fruits, or their seeds whose germinative powers do not withstand prolonged desiccation. It follows that the easiest and therefore most probable way by which the importation of the orange-tree from China to India must have taken place was the sea-route via Indo-China and the Malay Archipelago; it is significant, in this connection, to observe that in Tanjore on the East coast of southern Hindustan the sour orange is called *nartun*,¹⁰⁷ and not *naranga* as in the northern regions, a fact which may be taken to point towards the independent introduction of the tree from countries beyond the sea. But the East coast of southern Hindustan is precisely that part of India of which the harbours were, at the beginning of the Christian era, the principal marts for the exchange of goods between the merchants of China, Indo-China, and the Archipelago on the one hand, and those of India and western Asia on the other; and since, as will be shown in a later chapter, by the middle of the first century A.D. oranges were already known in Italy as an Indian fruit, it is, at the latest, shortly before the beginning of the Christian era that the China orange must have become acclimatized in southern Hindustan. Such is not the view hitherto held by those who have written on the history of the orange, all of whom, indeed, have unhesitatingly accepted the opinion of de Candolle—who in turn took his inspiration from Galesio—that in the early centuries of the Christian era the orange had not yet been introduced into Hindustan proper, that is to say into that part of India between which and the western world active commercial intercourse had

¹⁰⁶ QB, p. 320.¹⁰⁷ AD, pp. 216-217.

already been going on for some considerable time. In a passage which is a masterpiece of analysis and deduction, Galesio had written (A.D. 1811): "The orange and the lemon trees were unknown to the Romans: they could therefore be indigenous only in a country to which that great people had never penetrated. The limits of that vast empire (i.e., the Roman empire) are well known; but commercial relations always extend far beyond political connections: if these plants had been cultivated in countries open to Roman trade, their fruits would have been the delight of the table in that city (i.e., Rome) addicted to luxury. They could not have been cultivated at that time except in the remotest parts of India, or in the regions situated beyond the Ganges."¹⁰⁸ De Candolle accepted Galesio's view: "The orange tree was unknown to the Greeks and the Romans . . . Since they had relations with India and Ceylon, Galesio presumes that these trees were not cultivated, in their time, in the western parts of India . . . Yet—observes de Candolle, relying on Roxburgh—the Sanskrit language had a name for the orange. . . ."¹⁰⁹ The fundamental error committed by Galesio and by all succeeding writers who made his views their own, consists in this that the premises on which his argument is built up, namely that oranges and lemons were unknown to the Romans in the days of the Empire, are wrong: conclusive evidence will be brought forward in chapter IV of this book to show that oranges and lemons were known to the Romans of the early centuries of the Christian era, and that, whilst it may be true that the trees themselves had not yet been fully acclimatized in Italy, the fruits were imported into that country from India or Arabia, and actually were (as Galesio thought they would be, had they been at all known) a "delight of the table" in Rome.

The maritime route from India to China, or vice-versa, runs through the Malay Archipelago. Everything that is alive in these islands, men, animals, and plants, shows distinctly a twofold origin. Both the cultivated and the wild species and varieties of the genus *citrus* are numerous everywhere,¹¹⁰ but they do not appear to be in any way indigenous, and must therefore have come from the

¹⁰⁸ AL, pp. 239-240.¹⁰⁹ DV, p. 146.¹¹⁰ HE, p. 131.

Asiatic continent. This can have happened along three different routes: just as the Lu-tchu Islands, extending from Formosa towards the North-east, formed the bridge along which citrus fruits from China were no doubt passed on to Japan, so the island group of the Philippines, which run from Formosa southwards, provided another bridge, connecting the southern orange-growing provinces of China with the eastern parts of the Malay Archipelago: Borneo, Celebes, and the Moluccas; this was one route along which citrus fruits undoubtedly travelled south. A second possible, and to some extent probable, route was that which ran from the province of Yun-nan in South China via Tonking, Cochinchina, Siam, down to the Malay Peninsula, and across the Straits of Malacca to Sumatra, the largest and westernmost island of the Archipelago. There remained a third source whence citrus fruits must have reached the Malay Archipelago, and that is India, either by the direct sea-route from South India and Ceylon, or by the coastal shipping trade coming down along the western shore of the Indo-China Peninsula, by way of Bengal, Burma, and the Malay Peninsula to Sumatra. What were exactly, in the course of the centuries, the relations between the Malay Archipelago on the one hand, and China and India on the other?

The conditions of navigation between China and the Malay Archipelago have been very correctly described already by the Venetian Marco Polo, when he stated that "the vessels engaged in this trade . . . do not reap large profits, being obliged to consume a whole year in their voyage, sailing in the winter and returning in the summer. For in these regions only two winds prevail, one of them during the winter, and the other during the summer season; so that they must avail themselves of the one for the outward and the other for the homeward bound voyage."¹¹¹ This situation remained unchanged until steam navigation took the upper hand in the China seas. The junks employed by the Chinese in trading to the islands of the Archipelago are not, by their construction or mode of rigging, adapted to work against contrary winds, and require therefore two monsoons for the performance of their outward and homeward-bound voyages; the

¹¹¹ MF, Book III, Ch. IV (p. 355).

north-east or winter monsoon, which blows from October or November until February or March, is that which is favourable for sailing from the southern parts of China to Java or Sumatra, whilst the south-west monsoon, which sets in towards April or May and blows until August or September, is used by the junks on their return home. And, since in southern China oranges ripen during the winter, that is to say precisely at the time of the year most favourable for the southward journey of sailing vessels, it is obvious that this coincidence could not fail to be an eminently favourable factor in the dispersion of Chinese citrus fruits throughout the Malay Archipelago itself and in the islands at which the junks would call during the outward voyage. At least as far back as the first century A.D., Chinese vessels were already sailing the China seas, to Java and Malacca, and even beyond to Ceylon and the neighbourhood of Cape Comorin in southern Hindustan. There is still extant the account of the journeys of a Chinese Buddhist monk, Fa-hsien, who in the course of a pilgrimage which lasted from A.D. 399 to 419, went overland from China to India by way of Turkestan and Afghanistan and returned home by sea, taking passage at Ceylon on one of the Chinese trading junks that were plying between Canton and southern India via the Malay Archipelago and the Straits of Malacca.¹¹² A Malayan district, referred to in Chinese records as Po-se, which produced an impure kind of alum, was marketing the same in Canton during the third and fourth centuries A.D.; it also acted as a transit mart for the import into China of pure white alum of western Asiatic origin which was traded in India, and from there to the Malay Archipelago where the people of Po-se took charge of it and shipped it to Canton.¹¹³ Similarly, and also before the fifth century, an intensive trade in myrrh was taking place from East Africa and the Hadramaut Coast of Arabia to China by way of the Malay Archipelago.¹¹⁴ Arab trade with China, of which the centre was at Palembang in Sumatra, was particularly flourishing during the ninth and tenth centuries; Arab travellers of that period have left it on record that in the island of Java they found, apparently permanently settled, a large number of Chinese merchants who had left

¹¹² MP, p. 106. ¹¹³ IV, pp. 475 and 481. ¹¹⁴ IV, p. 480.

their home country on account of political troubles there.¹¹⁵ The greatest of all Mohammedan travellers, Ibn-Batutah of Tangiers, in the first half of the fourteenth century, described "Zeitun"—an arabicised form of Tse-tung, the ancient name of the present town of Tsüen-chau in the province of Fukien—as the biggest port of the world and as receiving an immense number of vessels from India as well as from the Malay Archipelago;¹¹⁶ it was at the southern end of the latter, at Malacca, that the Portuguese, after they had doubled the Cape of Good Hope, came first in contact with junks trading between China and the Malay Archipelago.¹¹⁷ To this day, the Chinese element predominates amongst the population of many of the islands of the Archipelago.¹¹⁸

Between India proper and the Malay Archipelago there has never been such a close contact as between the latter and Indo-China and China, the principal reason being, of course, the lack of such intermediate stations as those which, as we have seen, serve as a bridge between the principal islands of the Archipelago and the south-eastern countries of the continent.

Moreover, be it for some innate aversion to risky affairs, or, as has been suggested,¹¹⁹ because persons of the higher castes found it difficult to engage in sea-travel without incurring the risk of pollution both in respect to contact and to food, it seems in a general way to be true that Hindus have not produced great navigators. Yet, the very extensive sea-frontiers of southern India could not but invite the population to venture out upon the waters, and in fact the sea-traders of the southern part of the Peninsula came at an early date to play in the Indian Ocean a role similar to that of the Phoenicians in the Mediterranean.¹²⁰ Although prompted in its beginnings by the desire for material profit, Indian maritime expansion was at the same time powerfully aided by factors of a religious nature; for wherever the Indian merchant went, he was soon followed by Buddhist and Brahmin missionaries. Between them they laid, towards the first century A.D.,¹²¹ the foundations of great Indian colonies in Sumatra, Java, Siam, and

¹¹⁵ HL, pp. 1 and 31.

¹¹⁸ OF, p. 84.

¹²⁰ HB, p. 70.

¹¹⁶ HL, II, p. 246. ¹¹⁷ OF, p. 79.

¹¹⁹ MF, p. 391, footnote 2.

¹²¹ CU, p. 399.

southern China, which colonies, in the following few centuries, expanded into independent Indo-Aryan States thanks to the help of Indian princes whom political upheavals at home compelled to take to the sea and seek their fortunes abroad.¹²² Tradition speaks of intensive Buddhist propaganda carried on, during the fifth century, by missionaries who had come from the North of India,¹²³ spreading Indian culture wherever they went. Inscriptions in the highlands of Sumatra point to the existence of a powerful Hindu kingdom there in the seventh century.¹²⁴ In time, the various Indian principalities in the Archipelago, whilst remaining true to Indian culture, became more and more Malay in racial and political character, whilst at the same time they gradually became fused into a small number of important states. The Arab historian and geographer Mas'udi, writing in the early tenth century, describes what he calls the kingdom of the Zabej, a powerful empire, the centre of which was comprised of the islands of Java and Sumatra, and whose power extended so far that at one time certain districts in southern Hindustan formed part of its dependencies.¹²⁵

The result of this twofold connection between the Malay Archipelago and the Asiatic continent, namely with South China on the one hand and southern India on the other, combined with the fact that Chinese enterprise was of a purely commercial character and that of India more of a cultural and political nature, has been that throughout the East-Indian islands the material aspects of the Malay civilization are akin to those of the Chinese, whilst its cultural aspects, its religion, legends, and art are definitely of Indian inspiration. The dual influences which brought about this hybrid nature of Malayan civilization were also responsible for the peculiar nature of the Malayan citrus flora, which comprises on the one hand oranges and shadocks of Chinese origin, and, on the other, citrons, lemons, and limes imported from India.

The Malay name for "orange, *jruk*, is already found in an Old-Javanese Ramayana-text composed before A.D. 1200, and the place Jrukcri, deriving its name from the fruit, is mentioned in an inscription of about A.D. 915

¹²² HB, p. 74.

¹²⁴ HB, p. 97.

¹²³ CU, p. 400.

¹²⁵ MP, pp. 39 and 223.

(Brandes, Oud-Javaansche Oorkonden, No. XXXVI).¹²⁶ Sweet oranges as one of the common fruits of the Malay Archipelago were first reported by Ibn Batutah in his description of the Island of Sumatra, which he visited in or about the year 1329, and which he calls Jawadt, i.e. Little Java: "This is a green and blooming island. Its trees are mostly coconuts, betel-nuts, cloves, Indian aloe, . . . bananas, sweet oranges, . . ." ¹²⁷ In a report written for the Grand Master of the Templars at Rhodos, one Antonio Pigafetta, an Italian knight of the Order, who spent three years on a voyage to the Moluccas and back (1519-1522), states that "in all the islands of the Moluccas there are to be found cloves, ginger, sago which is wood-bread, rice, . . . pomegranates, both sweet and sour oranges, lemons . . ." ¹²⁸ He gives us particulars as to some of the uses to which these fruits were put: "the betel-nut is a fruit which they keep chewing together with flowers of jasmine and orange"; ¹²⁹ and the cannibals of the islands of "Bathuan" and "Calaghan," whom he calls "Benaian," eat no other part of the human body but the heart, uncooked but seasoned with the juice of oranges and lemons." ¹³⁰ G. E. Rumphius (1637-1706), a governor of the Dutch Indies and the author of a monumental "Herbal of Amboyna," already pointed out that in his time the inhabitants of the Archipelago believed the orange as well as the mandarin tree to have been recent introductions from China: ¹³¹ they called the orange the "Chinese lemon," and in the seventeenth century it was mostly cultivated by the Chinese section of the population. ¹³² To this day, sweet oranges are shipped in large quantities during the winter months from the Swatow and Amoy regions in southern China and from the Taiwan region of Formosa, to Manilla, Singapore, and Batavia. ¹³³

The sour orange was not very common in the Archipelago in Rumphius's time. He says (Chap. XLI, vol. II): ¹³⁴

¹²⁶ Communicated by Professor N. J. Krom, of Leiden.

¹²⁷ Fragment on the Malayan Archipelago, published by Dulaaurier in the *Journal Asiatique, série iv, tome ix* (1847), p. 106, in the Arabic original together with a French translation, and quoted by KN, II, p. 316.

¹²⁸ PK, p. 365. ¹²⁹ PK, p. 339.

¹³⁰ PK, p. 349.

¹³¹ DV, p. 149. AD, p. 219.

¹³² AD, p. 330.

¹³³ QC, p. 226.

¹³⁴ Quoted by AD, pp. 216-217.

"It does not occur in all the islands of maritime India. Moreover in Java, Baleyra, and Celebes, the orange is unknown. In Amboyna (one of the Moluccas) it is more plentiful, but in Ternate and Banda it is rarely met with." The fruit when still green was used for "cleaning and polishing copper, whether alone or mixed with powdered charcoal, so that the copper become bright and splendid if at once it be washed in water and dried in the sun. . . . They (i.e., the sour oranges) must be peeled before squeezing their juice . . . They also clean off perspiration. For this purpose they are first toasted over hot ashes, till they slightly burn and blacken; then they are cut and used . . . They are (also) used in the preparation of a sort of rustic drink, called "Puns" (punch)."¹³⁵

Of shaddocks, numerous varieties are to be found, which seems to indicate that these trees must have been grown there from very remote times, Rumphius¹³⁶ did not, however, consider them indigenous to the Archipelago and was definitely of the opinion that they had been imported from the Asiatic continent. Neither he nor any of the modern botanists have met them wild in any part of the Archipelago proper,¹³⁷ but they are so found in some of the southern Pacific islands. Forster¹³⁸ describes the species as "very common in the Friends Islands," and according to Seemann¹³⁹ "shaddocks are extremely common in the Fiji Islands, where they cover the banks of the rivers." That the shaddock is not of Indian origin should seem to be clear from the fact that although it is grown in gardens over a great part of Hindustan and Bengal it does not really come there to perfection; moreover the name *Batavi nimbu* (i.e. Batavian citrus), by which this tree is called by the Bengalese themselves, shows that the latter look upon it as having been brought to India from the Archipelago.¹⁴⁰ The Portuguese, who came to the East Indian islands early in the sixteenth century, when local traditions were younger and certainly not less reliable

¹³⁵ Quoted by AD, p. 324.

¹³⁶ NE, II, p. 97.

¹³⁷ Miquel, *Flora indo-batava*, I, part 2, p. 526, quoted by DV, p. 141.

¹³⁸ Forster, *De plantis esculentis oceani australis*, p. 35, quoted by DV, p. 141.

¹³⁹ Seemann, *Flora Vitiensis*, p. 33, quoted by DV, p. 141.

¹⁴⁰ HM, p. 721.

than those current to-day, found the tree widely cultivated in Java and called it *poma sina grandissima*, i.e. the biggest Chinese apple.¹⁴¹ The German botanist Georg Meister, who visited the island in 1677, reports this fruit as being grown in large numbers outside the city of Batavia, both in the fields of the native Javanese and in the orchards and gardens of the Dutch settlers.¹⁴² The skin of the particular variety grown there was marked with brown spots, which accounts for the name of "tiger orange" given to it by the Javanese.¹⁴³ The fruit of the shaddock was held in high esteem both by natives and Europeans, and the praise given to it by Rumphius will be wholeheartedly endorsed by every grape-fruit lover of to-day: "This fruit is only used for being eaten in the uncooked state, and is mostly served up at banquets, either just the pulp alone, or the same prepared with Spanish wine and sugar, which provides a pleasant refreshment on hot days . . . It is also a splendid fruit for sea-voyages, seeing that it can be kept a long time and without getting spoiled."¹⁴⁴ To what extent this last remark is true may be judged by the fact that towards the close of the seventeenth century, in spite of the long duration of the voyage by sailing vessels, shaddocks were being regularly shipped from the Dutch Indies to Holland.¹⁴⁵

The citron and the lemon are found all over the Malay Archipelago, both cultivated and in the wild state. Rumphius, in his *Herbal*, has described and depicted a number of varieties, adding that in his opinion none of them could be considered as being really wild and indigenous to the islands. Similarly, Miquel,¹⁴⁶ about a hundred years ago, was quite definite on the point that in the Archipelago citrons and lemons are foreign introductions. If so, where did they come from?

With regard to the citron an unambiguous answer is given to the question by a number of reliefs on the principal surviving monuments of Indo-Javanese Buddhist art, reliefs which include representations of the Indian god of treasure, Kuvera, holding his attribute, the citron. We find him on the eighth century *stupa*,

¹⁴¹ KJ, p. 84.

¹⁴² KJ, p. 84.

¹⁴³ KJ, p. 85.

¹⁴⁴ NE, p. 97.

¹⁴⁵ BI, p. 181.

¹⁴⁶ Miquel, *Flora indo-batava*, I, part 2, p. 528, quoted by DV, p. 143.

Barabudur,¹⁴⁷ that largest and most magnificent of all the Hindu temples of Java, which is nothing less than a whole hill encased with hewn lava-blocks and covered with thousands of sculptures that make it like a great picture bible of the Mahayana creed. We find him again on the neighbouring sanctuary Chandi Mendut¹⁴⁸ dating also from the second half of the eighth century A.D., as well as on the temple Lara Jonggrang, built about 900 A.D., at Parambanan, the site of the ancient capital of the country.

Lemons are reported as being widely grown in the Moluccas and other islands, by Pigaphetta in 1522.¹⁴⁹ Rumphius, towards the end of the seventeenth century, describes a number of varieties of lemons and limes and the manifold purposes for which they are used by the Malays. Certain lemons are eaten raw, divided in quarters and sprinkled with sugar; the peel of others, scraped off and mixed with a little water, is used for scrubbing the head after it has previously been washed, which results in conveying a nice smell to the hair; the juice of the most acid varieties is used in the preparation of paints; the pounded rind of still another enters into the composition of a scented ointment with which the people rub their body and head; the inhabitants of Macassar make a large use of the roots of old lemon-trees—which furnish a wood both solid and pleasantly streaked—for manufacturing the handles of the large knives called *kris*, the production of which is the concern of one of their local industries; the juice of a certain variety called “weapon lemon” serves to clean rusty swords and daggers, a process in the course of which a certain quantity of corrosive sublimate is sometimes added to the juice for the purpose of poisoning the weapon; other lemons, again, are used for cleaning copper by treating the latter either with the juice alone or with the juice mixed with charcoal, after which the objects so treated have to be washed in water and dried in the sun; lastly, different varieties “are used by the people of Macassar for washing their clothes, for which purpose they take a larger proportion of juice than water. This, however, is chiefly done with clothes of royal persons, because, when they are so washed, they both better

¹⁴⁷ IN, plate I, b19.

¹⁴⁸ IN, pl. 19.

¹⁴⁹ PK, pp. 335, 339, 345, 349, 365.

absorb and retain the odour of musk and zibeth, and similar scents."¹⁵⁰

With a similar wealth of detail, Rumphius describes a number of varieties of limes, and the different uses they were put to by the Malays in his time. Except for seasoning lettuce, they much prefer lime-juice to vinegar in their food; in order to have limes at hand all the year round, they pickle them in brine, place them in well-closed jars and keep them thus in perfect state, sometimes for years. The juice of certain limes, like that of lemons, mixed with corrosive sublimate, is used for giving a blue colour and poisonous effect to steel blades such as those of swords and *krissen*; the juice of others, diluted in half the quantity of water, furnishes a much-prized eye-wash. With the leaves of a variety called *nipis*, the natives rub their hands whenever they have touched anything unpleasant, whilst its juice is used—in the same manner as that of certain lemons—in the preparation of *cassomba* paint. The *maas*, or "gold" lime, is so named, not on account of its colour, but of the use to which it is put by goldsmiths for cleaning every kind of gold article which they afterwards intend to cover with a pigment. The fruit of the "madura" lime is not eaten raw, but preserved (in sugar?) with one or two leaves to give it a nice flavour, as a dessert to be served after meals.¹⁵¹

It is probable that quite a number of the many different varieties of lemons and limes to be found in the Malay Archipelago are the results of accidental sports, and are, as such, indigenous to the islands. In this sense Bonavia (1888) was certainly right when he said: "I believe that the Malay Archipelago with its numerous islands, its temperature and moisture, has played an important part in giving birth to new varieties of citrus . . . At each place new varieties resulted from the sowing of the seed, under different conditions of climate, soil, etc."¹⁵² The close and frequent relations between the many islands, situated at no great distance of one another, must have greatly helped in spreading these numerous varieties all over the Archipelago, especially whenever a large number of islands happened to be united under one rule, as was the case

¹⁵⁰ Quoted by AD, pp. 305-312.

¹⁵¹ Quoted by AD, pp. 315-321.

¹⁵² AD, p. xviii.

towards the ninth century A.D. when the mighty empire of the Zabej spread its wings from Sumatra, Java and the peninsula of Malacca in the West, to Borneo and Celebes in the East, and to the Philippines in the distant North near China.¹⁵³

The same impulses that drove man, and with him the seeds of cultivated plants, from island to island throughout the Malay Archipelago, at other times and in other seasons and aided by other winds and sea-currents, led him eastward towards the rising sun, to people the thousands of mostly small islands which dot the Southern Pacific. The fact that throughout these regions the dead are usually taken to and buried near the western shores of the island they inhabited is sufficient evidence of the direction from which, according to local beliefs, the race had come; the same holds good for the vegetable kingdom: fruits are abundant, but very few are indigenous, most of them being clearly of tropical Asiatic character, at least in the plains. Citrus trees, especially the orange, appear to have been long established in many of the south Pacific islands; the relative scarcity of orange-trees in the eastern part of the Pacific¹⁵⁴ as compared with their abundance in more western parts may be taken as further proof of their continental Asian origin.

¹⁵³ MP, p. 202.

¹⁵⁴ DU, II, p. 869.

CHAPTER II.

THE ACCLIMATIZATION OF THE CITRON IN WESTERN ASIA
AND NORTHERN AFRICA.

JUST as citrus trees travelled concurrently with human migratory movements from China and the Malay Archipelago eastwards towards the islands of the Pacific Ocean, so were they carried in the wake of commercial and military enterprise from Monsoonia westward towards Mesopotamia, Arabia, and the east coast of Africa.

South of the line of the Equator, between the parallels of 7° and 20° S., the Equatorial sea-current flows westward all the year round, from Sumatra, Java, and the other islands of the Archipelago in a straight line to Madagascar and the African coast. The extent to which the precise and unchanging regularity of this current must have facilitated the spread of the culture of citrus trees can be gauged from the nature of the population, the fauna, and the flora of Madagascar and the neighbouring islands. Although geographically belonging to Africa, ethnographically Madagascar appears rather as a dependency of the Malay Archipelago, for the lighter portion of its population are of Malayo-Polynesian, and the darker races of Melanesian stock, as is evident not only from their physical appearance, but also from their mental habits, their customs, and, above all, their language; their traditions, too, point in the same direction. In the same manner many of the animals and plants of the island present well-defined Asiatic and Malayan affinities. North of the Equator the sea-currents are under the control of the monsoons, and change with them according to the seasons. From the west coast of Hindustan the winter monsoon, which blows in December and January—the time of the year when oranges and lemons ripen—carried the sailing vessels of ancient times in about forty days to the Red Sea,¹ that is to say, in a period of time which still

¹ MC, IV, 26.

allowed for citrus fruits, not over-ripe when picked, to be delivered in Arabia in good condition; similarly, for several centuries before the Christian era, extensive coastal shipping seems to have gone on between the mouth of the Indus and the eastern parts of the Persian Gulf, especially with Omân on the east coast of the Arabian Peninsula; whilst since immemorial times caravan roads of international importance ran from the Punjab through Afghanistan and Persia to Mesopotamia, and thence on to Syria, Palestine, and Egypt.

The excavations carried out in recent years at Mohenjodaro in Sind and at Harappa in the Punjab by the Department of Archaeology of India under Sir John Marshall, and those conducted by Sir Leonard Woolley, for the British Museum and the University of Pennsylvania at Ur in Sumer (Lower Babylonia), have not only revealed the existence there, as far back as some 5,000 years ago, of two hitherto unsuspected surprisingly advanced prehistoric civilizations, but also such striking similarities between the cultures of the two countries—similarities in the material aspects of the peoples' lives as well as in their religious beliefs—as can be explained only by assuming the existence, fully 3,000 years before the Christian era, of intimate commercial relations between the regions of the Indus and those of Southern Mesopotamia.² The intercourse at the time appears to have been by land, through Afghanistan and Persia³. In regard to their climatic conditions, the valley of the Indus and the plain of Lower Mesopotamia present such close affinities with each other as well as with the interlying southern parts of Persia, that together with the latter they have been classed, by at least one great plant geographer, into a separate "zone of vegetation" by themselves;⁴ the Brahmin script from which all Indian alphabets are derived, is believed to have been introduced into the Indus valley about 800 B.C. by traders coming by way of Mesopotamia;⁵ and the fact that the Hebrew terms for ape, peacock, sandalwood, cotton and nard are of Indian origin certainly suggests early trade relations between India and the countries on the eastern shores of the Mediterranean.⁶

² KC.³ NK, p. 205.⁴ FG, p. 478.⁵ HB, p. 42, footnote.⁶ LU, ivx, p. 1297.

That the Assyrians of the second millennium B.C. had reached, compared with other nations of their time, a remarkably advanced standard of learning in astronomy, is common knowledge; it has only quite recently been shown that in the field of practical medicine their achievements rank perhaps quite as high. Assyrian texts furnish ample evidence of a systematic practice in medicine, a very comprehensive and thorough knowledge of disease, and a close acquaintance with drugs and their effects.⁷ Among the vegetable drugs mentioned in a collection of 660 Assyrian medical texts inscribed on clay tablets,⁸ there occurs a number of times a drug called *iltakku*, a name which—allowing for replacement of the liquid *r* in the foreign word by its equivalent *l*, and for the subsequent exchange of places between the two adjoining consonants *l* and *t*, an everyday occurrence in Semitic languages—has been identified with the Hebrew name *etrog*, for citron, and has been taken to apply to the lemon⁹ or the lime;¹⁰ but it more probably refers to the citron itself.

If this identification with some species or other of *citrus* is correct, and there seems to be very little doubt that it is, then *iltakku* would appear to be derived from the Sanskrit *matulunga* (citron) rather than from the Hebrew word which, as well as its Arabic equivalent *utruj*, might on the contrary be derived from the Assyrian term;¹¹ also that *iltakku* was the name of the citron rather than that of any other species. The Assyrian practitioners, as appears from the texts in question, made use both of the juice of the fruit, "to be put on the tongue," and of the essential oil extracted from the peel, "for the feet."¹² Layard ("Monuments of Nineveh," New Series, plate IX) has reproduced an Assyrian sculpture on which two men forming part of a procession are shown pompously carrying in their hands, as if they were taking some great rarity to the king or his ministers, a pine-apple shaped object which,

⁷ R. Campbell Thompson's chapter on "The Influence of Babylonia," in DR, III, p. 240.

⁸ OX, p. vii. ⁹ OX, pp. x, xix, 182, 183. ¹⁰ OX, p. 183.

¹¹ Whilst the Hebrew language certainly contains many words of Assyrian origin, Assyrian itself has borrowed numerous foreign names of drugs from Hatti, Phoenicia, Egypt, the Persian Gulf, etc. (OX, p. xxiv).

¹² OX, p. 182.

Bonavia maintains, was very probably intended to represent a fingered citron to which fruit some superstitious notion may have been attached.¹³ In another sculpture, a similar procession shows a man carrying a basket containing three cone-like fruits (fig. 1),¹⁴ which in Bonavia's opinion may have been the ordinary form of citrons.¹⁵ On the other hand, in the course of excavations carried out on the site of the old Babylonian city of Nippur, there have been unearthed a number of oblong seeds which after long and difficult investigation have been indentified as belonging to the genus *citrus*. As they were charred almost out of recognition,

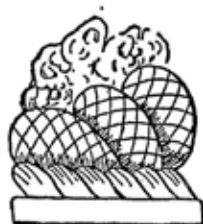


FIG. 1.

it was impossible to determine with certainty the particular species, but the pattern of the grooves still tolerably recognizable on the surface of the seeds is considered to point to some variety of *citrus medica* (citron, lemon, or lime) rather than to the orange.¹⁶ In view of the importance of the find, which is the only one of its kind hitherto recorded in Western Asia, it is particularly unfortunate that it has not been possible to determine, even approximately, the age to which the seeds belong. As it is, the presence of a small quantity of seeds in one only of the ancient sites hitherto unearthed in Mesopotamia, cannot reasonably be accepted as evidence of the tree having been actually cultivated in that country. If seeds had been found, scattered over a number of places, it might have been possible to argue about the matter; but the fact of their occurring just in one place, and that in what was at the time the capital and residence of an important kingdom, rather points to their being the remains of a small

¹³ DA, pp. 66, 67 (texts and fig. 29), 72. ¹⁴ DA, fig. 30.
¹⁵ DA, p. 68. ¹⁶ GB, p. 181.

number of valuable, and therefore probably foreign, fruits brought from some tributary country either as a present to the king or to some other mighty personage, or as an offering to the gods; it certainly does not convey the impression that the seeds are those of a tree common in the country. Besides, if the citron had been grown even on a very limited scale in remote times in Mesopotamia, then it would have become quite a common tree there by the time of Alexander the Great's conquest of the country in the late fourth century B.C.; that this was not the case is sufficiently proved by the fact that the Greek botanists who accompanied Alexander to Asia, whilst they do mention the fruit, call it the "Median" or "Persian" apple, and add that in their days the citron was grown only in Persia and Media. Since Media was, at different times, tributary to Assyria, the references which occur in the Assyrian Lists to "an *iltakku* which by its water-channel has not been planted," or to "an *iltakku* torn up by its roots,"¹⁷ may quite well be considered as evidence of a very early culture of the tree in Media, and do not imply that it was grown in Assyria itself.

If during the second and most of the first millennium B.C. citrus fruits were not grown in Mesopotamia, it is difficult to admit that they were grown at the time in countries still further west and south such as Palestine or Egypt, unless the fruit reached those regions via the Indian Ocean and the Red Sea. The "golden apples" mentioned in the Bible—"a word fitly spoken is like apples of gold in baskets of silver" (Proverbs xxv. 11)—were certainly not citrus fruits but actual golden balls, as is suggested by the parallelism between this verse and the one that follows it, "as an earring of gold, and an ornament of fine gold, so is a wise reprover upon an obedient ear."

The French archaeologist Loret believed that citrons are among the fruits depicted on the walls of a room in the great temple of Karnak in Egypt, which are covered with paintings representing a number of trees reported to have been brought back from Asia by Thutmosis III, about 1500 B.C., on his return from his Syrian campaigns; Loret also thought that he could identify as citrons several

¹⁷ OX, p. 183.

fruits which he found in tombs of the same period and which closely resemble those depicted on the walls at Karnak.¹⁸ And so he concluded that the citron tree was grown in Egypt as far back as the second millennium B.C. Loret's theory does not, however, sound at all convincing, based as it is on doubtful identifications made partly by scientists who accompanied Napoleon Bonaparte on his expedition to Egypt, and partly by Loret himself who was forced to admit that the wall-paintings on which he relied were not very clear. Bonavia, too, thought that he had found evidence proving that the "fingered" citron was known to the ancient Egyptians: "During the session

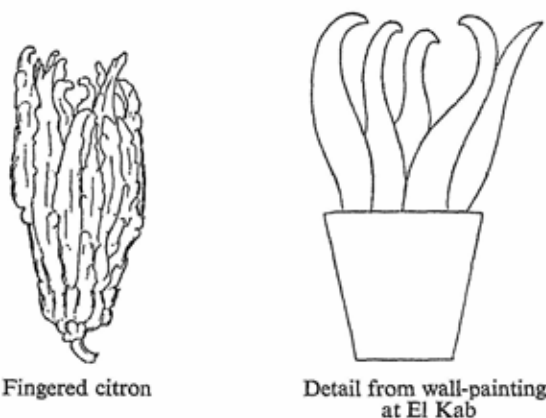


FIG. 2.

of the Ninth International Congress of Orientalists in the reception room of the University of London, I saw three reproductions of Egyptian wall paintings from El-Kab. One of them had an interesting group of men carrying baskets of grapes, pomegranates—strung as they string onions nowadays—and exactly like those given by Layard . . . One of his Egyptian group carries a basket containing some fruit, which is uncommonly like a fingered citron (fig. 2). I don't think this can be interpreted into anything but a fingered citron . . ."¹⁹ This identification by Bonavia does not appear to be any more convincing than those by Loret.

¹⁸ AU, pp. 225-271.¹⁹ DA, pp. 70-71.

In Persia, both in the southern provinces along the Persian Gulf and in the hot and damp region of Gilân bordering the Caspian Sea, conditions were exceptionally favourable for the culture of citrus fruits. "It was the realm of the rose and the nightingale, of scents and songs, and its gardens have given its name to Paradise."²⁰ The Persians called *peridaisos* a type of large park, enclosed by walls, of which they were the original creators. These parks were the favourite hunting grounds of the Persian kings, and wild animals were collected and kept there for the purpose. It is from these royal Persian parks that the name "Paradise" has been derived, as well as the term *pardess*, by which in subsequent centuries the Jews in Babylonia and in Palestine came to designate irrigated orchards of fruit trees.

The acclimatization of the citron in Persia must have been effected not later than during the first half of the first millennium B.C. We have said already that the botanists whom Alexander the Great took with him on his Asiatic campaigns called the citron the "Median" or the "Persian" apple. Now, at that time there were already in existence, in Persia, Greek settlements about 200 years old, peopled by the descendants of captives from the Greek cities of Barca in Cyrenaica, Miletus in Ionia, and Eretria in Euboea, whom Cambyses and Darius I had deported wholesale to Persia between the years 520 and 490 B.C. Alexander's army passed through these Greek cities of Persia, and it may be taken for granted that the botanists who travelled with the army would not have called the citron, which they found cultivated extensively in that country, the "Persian" apple had they not been convinced that the use by the Greeks of the alternative name—"Median" apple—was due to the fact that the Greek settlers in Persia knew that the citron-tree had already been commonly cultivated there in the time of the Medes, who ruled Persia from the ninth to the middle of the sixth century B.C. In this connection it is worth remembering that from 640 till 606 B.C. Persia was tributary to the Assyrian empire, of which Nineveh—where Layard found the sculptures depicting the pine-apple-shaped objects described on p. 41—was the capital.

²⁰ HQ, p. vii.

In 606, Nabopolassar (Nabu-pal-ussur), the Assyrian viceroy in Babylonia, having concluded an alliance with the Median king Cyaxares, rebelled against Assyria, defeated her armies, destroyed Nineveh, and founded the Neobabylonian Empire with Babylon for its capital; it was his son and successor Nebuchadnezzar (Nabu-kudurri-ussur) who conquered Syria and Palestine, and carried large numbers of Jews into captivity in Babylonia. But the dynasty and empire founded by Nabu-pal-ussur were to last only a very short time, and in 538 Nabunahid, the last king of Babylonia, was attacked, defeated and taken captive by Cyrus, king of Persia, who had already succeeded before this in conquering Syria and the Ionic states and cities of Asia Minor. Together with Babylonia itself, all its outlying possessions, including Syria and Palestine, were now incorporated in the young Persian empire, so that from the Hellespont to the Nile Persia was the master of the whole eastern shore of the Mediterranean. It was the rise and westward expansion of the Persian Empire, its struggle with Greece for supremacy in the eastern Mediterranean, culminating in the Asiatic campaigns of Alexander the Great and the subsequent hellenization of Western Asia, that led to the first acclimatization of citrus trees in the classical Orient.

As early as the sixth century B.C., Greeks from continental Hellas had travelled and resided in different parts of Persia and Media, and it is not improbable that from such men as Democritos of Abdera—who as a boy was educated by Persian and Babylonian teachers and later on travelled extensively in Mesopotamia, Persia and, some say, even as far as India²¹—or the physician Ktesias, of Cnidus in Ionia—who practised for seventeen years at the Court of Cyrus²²—the Greeks may have received some knowledge of the tree that bore the golden fruit. The earliest direct reference, however, to citrus fruits and in particular to the citron occurs, it seems, in the works of Antiphanes (c. 408-334 B.C.), a foreigner settled in Athens, who became one of the most important writers of the so-called Middle Attic comedy. In one of his plays, called "The Boeotian"—of which just one single amusing fragment has been preserved in the "Dnicipnosophists" or

²¹ FB, pp. ix, 35.

²² QH, I, viii. 26. FA, II, 32.

"Banquet of the Learned" by the Alexandrian writer Athenaios of Naucratis (c. A.D. 195)—he brings upon the stage a young man who presents some citrons to his mistress:²³

- A. . . . now, my girl,
Just take these apples.
- B. They are fine to look at.
- A. Indeed they are, and good too, O ye gods!
For this seed has arrived not long ago
In Athens, coming from the mighty king.
- B. I thought it came from the Hesperides;
For there they say the golden apples grow.
- A. They have but three.
- B. That which is very beautiful
Is rare in every place, and so is dear.

And Athenaios adds: "And if any one is able to contradict this, and to show that these descriptions are not meant to apply to the fruit which we now call the citron, let him bring forward some clearer testimonies." Basing themselves on Antiphanes' text, Civinini²⁴ (1734), Risso and Poiteau²⁵ (1818), and more recently Targioni-Tozzetti²⁶ (1899), have maintained that the "Great King"—which was the official title given by the Persians to their ruler—sent a present of citron seeds to the people of Athens so as to enable the latter to propagate the tree. If this interpretation were correct, it would suggest a much earlier acclimatization of the citron-tree in Europe than can be established by historical facts. The truth seems to be that the young man in the play, by way of a joke, describes as "seeds" actual citron fruits, the size of which must have appeared as enormous compared with the ordinary apples grown in Attica; on the other hand, the text does seem to justify the belief held by Hellenistic writers like Athenaios that, towards the middle of the fourth century B.C., citrons were being exported from Persia to Athens, not indeed as "presents coming from the mighty king," but just as merchandise in the normal course of the extensive trade

²³ CK, III, 27.

²⁵ BE, p. 224.

²⁴ AF, p. 26.

²⁶ OU, p. 154.

in costly oriental drugs, scents, cloth and other luxuries,²⁷ which had sprung up between Western Asia and continental Greece since the end of the Greco-Persian wars.

Some fifty years after the appearance of Antiphanes' "Boeotian," we have the first minute and truly scientific description of the citron-tree, if not by an eye-witness, then at least by an eminent botanist who had at his disposal reports written by colleagues who had actually seen the plant growing in Persia.

In 334 B.C., Alexander the Great landed in Asia Minor and initiated the series of brilliant campaigns which within a few years were destined to make him the master of the whole of western Asia and Egypt. Impelled not purely by lust of conquest for the sake of military glory or by the wish to free Greece from the danger of renewed attacks on the part of the hereditary Persian foe,²⁸ but also by a noble desire to carry Grecian culture to the Barbarians of the East, Alexander, on starting out for the conquest of Asia, had taken with him a large staff of Greek scientists, to whom he had entrusted the duty of studying the geographical features, the people, and the natural products of the various countries which he intended to win; these competent observers accompanied, it seems, the king or his principal generals in all their campaigns through Asia Minor, Syria, Palestine, Egypt, Mesopotamia, Persia, and even as far as the Punjab and Sind which Alexander conquered in the course of his stupendous expedition of 327 to 325 B.C. Apparently, during the period of anarchy and generals' quarrels that followed Alexander's death in 323 B.C., the large collection of valuable reports brought together by this scientific mission remained more or less intact, though unused, in the State archives at Babylon; for it is generally admitted that the very detailed and surprisingly correct descriptions of eastern plants which we find embodied in the "Enquiry into Plants" by the greatest of Greek botanists, Theophrastes of Eresos—who wrote at Babylon around the year 310 B.C.—are in the main based on the reports of the scientists attached to Alexander's General Staff, whilst the whole conception of the work, its plan and even actual passages in it, have been ascribed to no less an authority than Aristotle himself,²⁹

²⁷ GO, pp. 213 and 218.

²⁸ HQ, p. 84.

²⁹ IC, pp. 21, 22, 37.

the teacher both of Alexander the Great and of Theophrastes. In book IV, chapter iv, entitled "Of the trees and herbs special to Asia," there occur the following lines: ". . . And in general the lands of the East and South appear to have peculiar plants, as they have peculiar animals; for instance, Media and Persia have, among many others, that which is called the Median or Persian Apple. This tree has a leaf like to and almost identical with that of the andrachne, but it has thorns like those of the pear or whitehorn, which however are smooth and very sharp and strong. The 'apple' is not eaten, but it is very fragrant, as also is the leaf of the tree. And if the 'apple' is placed among clothes, it keeps them from being moth-eaten. It is also useful when one has drunk deadly poison, for being given in wine it upsets the stomach and brings up the poison; also for producing sweetness of breath, for, if one boils the inner part of the 'apple' in a sauce, or squeezes it into the mouth in some other medium, and then inhales it, it makes the breath sweet. The seed is taken from the fruit and sown in spring in carefully tilled beds, and is then watered every fourth or fifth day. And when it is growing vigorously, it is transplanted, also in spring, to a soft well-watered place, where the soil is not too fine; for such places it loves. And it bears its 'apples' at all seasons; for when some have been gathered, the flower of others is on the tree and it is ripening others. Of the flowers, as we have said, those which have, as it were, a distaff projecting in the middle are fertile, while those that have it not are infertile. It is also sown, like date-palms, in pots with a hole in them. This tree, as has been said, grows in Persia and Media."³⁰

The passage just quoted displays in admirable association the qualities of scientific accuracy, attention to detail, and yet literary conciseness—the whole inspired by a constant regard for practical usefulness—which are characteristic of all Theophrastes' work. We have here everything: the habitat and name, the botanical characters, the use which can be made of the fruit or of the leaves in health or in disease—special stress being laid on the virtues of the juice as an antidote to poison—instructions for the propagation and cultivation of the tree, and two original

³⁰ OW, IV, iv, 2-3.

and important discoveries: one, that the citron "bears its apples at all seasons, for when some have been gathered, the flower of others is on the tree and it is ripening others," a peculiarity which made the tree a symbol of everlasting, perpetual spring and an unfailing source of inspiration to poets and artists ever since; and the other, that "of the flowers those which have, as it were, a distaff projecting in the middle are fertile, while those that have it not are infertile." This latter passage is one of unusual interest from the point of view of the history of botanical science, for it represents the first observation ever recorded of the part played by the pistil in the fecundation of the flower and the production of the fruit. It is, of course, true that the flower of the citron tree was exceptionally well suited for such a discovery thanks to the uncommon size of the pistil of which as a rule the capitate stigma, and often a good part of the style itself, project beyond the yellow circle of the stamina in a manner which cannot fail to attract the attention of any careful observer. From another passage in Theophrastes' treatise it is clear that, whilst the discovery of the sterile character of flowers devoid of pistil was originally due to the Persian gardeners, who reported the fact to the Greek botanists, it was the latter, and possibly Theophrastes himself, who first realised the great scientific importance of the discovery. "They say," he writes—"they" are apparently the Persian and Median gardeners—"that in the citron those flowers which have a kind of distaff growing in the middle are fruitful, but those that have it not are sterile. And we must consider whether it occurs also in any other flowering plants that they produce sterile flowers, whether apart from the fertile flowers or not. For some kinds of vine and pomegranate certainly are unable to mature their fruit, and do not produce anything beyond the flower."³¹ Not until about 2,000 years later has a contribution of equal value been made to the science of plant biology.

Critics have pointed out that, whilst Theophrastes deals only with plants of whose existence his Greek fellow-citizens were already aware,³² the whole tone of his description of the citrus tree gives the very clear impression that, whilst he may have seen the fruit, he himself did not

³¹ OW, I, xiii, 4.

³² KN, I, p. 6.

actually see a tree growing;⁸³ this together with his emphatic repetition, at the end of the paragraph quoted above, that "this tree, as has been said, grows in Persia and Media," ought to be considered as sufficient proof that shortly prior to 300 B.C. the citron was not yet grown in Mesopotamia, and still less in any country further west or south-west. On the other hand, the fact that Theophrastes does not even attempt to describe the fruit, yet mentions the various uses to which it can be put, certainly implies that the fruit was known already to the European Greeks, and corroborates the evidence furnished by Antiphanes as to the presence about half a century earlier, on the markets or in the shops of Athens, of citrons imported from Persia. It is probable that the first attempts to grow the citron tree in Mesopotamia were also the work of Alexander's botanical experts. Theophrastes, in a short passage preceding only by a few lines his description of the "Median apple" tree, refers to efforts made in Babylonia to acclimatize there a new variety of ivy which Alexander had brought back from India on returning from his expedition to that country. "When Harpalus took great pains over and over again to plant it (i.e. the ivy) in the gardens of Babylon, and made a special point of it, he failed: since it could not live like the other things introduced from Hellas."⁸⁴ It is difficult to believe that at the time when great pains were taken to acclimatize in Babylon purely decorative plants from Greece and from India, no effort should have been made to grow there the citron-tree, so greatly admired for its beauty, and producing a fruit so valuable if not for eating purposes at least as a drug and as a means of preserving costly vestments from moth or other insect damage.

Although Theophrastes' text clearly shows that in his days the citron was not grown in countries nearer west than Media and Persia, it has been the unanimous belief of all those who have hitherto written about the history of citrus fruits—Gallezio, de Candolle, and all modern authorities without exception—that the citron was first met with by the Jews in Mesopotamia during their captivity there and that, after Babylon had been conquered by the Persians in 539 B.C. and Cyrus had issued his famous decree

⁸³ HD, p. 445.

⁸⁴ OW, IV, iv, 1.

permitting the Judean exiles to return to their homes, they took the fruit with them and introduced its culture into Palestine. This opinion is, of course, based on the fact that Jewish religious tradition sees a citron in the *peri ets hadar*—commonly translated as “The fruit of a goodly tree”⁸⁵—which the Law enjoined each member of the congregation to carry in his hand during the service at the Temple, on the Feast of Tabernacles. Yet, whereas the festival itself, which marked the completion of the harvest of fruit, oil, and wine, was undoubtedly of quite ancient origin, some details of its ritual appear to be of a much later date. This is the case, in particular, in regard to the water libation (which is not mentioned earlier than in Zechariah xiv, 16-19, about 520 B.C.) and the commandment as to the use of the *peri ets hadar*, of which there is no trace either in the Book of Ezra (about 458 B.C.) or in Nehemiah’s account of the feast of Tabernacles at which he was present shortly after his first return to Jerusalem in 445 B.C. It follows that the only existing mention of *peri ets hadar* (Leviticus xxiii. 40) must have been introduced into the Pentateuch subsequent to 445 B.C.⁸⁶ It seems probable that the adoption into the priestly code of this quite obviously foreign feature of the ritual was prompted by the necessity of giving official sanction to a custom which had already come to stay. On the other hand, since the citron was not cultivated in Babylonia previous to about 300 B.C., and of course still less in countries nearer west or south, it follows that originally the *peri ets hadar* of Leviticus cannot have been a citron. In a paper read before the Palestine Oriental Society in 1928,⁸⁷ I have shown that the syllable *ha* in *hadar* is the Hebrew article, so that *peri ets hadar* simply means “the fruit of the *dar* tree.” Now, *dar* is a Sanskrit word which means “tree,” and we meet it in the name of the Indian holy tree *par excellence*, the giant cedar of the Himalaya mountains, known to botanists as *cedrus deodara*, from the Sanskrit *devadaru* meaning “the tree of God.” The Persians borrowed from the Indians both the cult of the tree and its name: they called it *dīvdar*, “the tree of the *dīv* or genii.”⁸⁸ *Peri ets*

⁸⁵ Leviticus xxiii. 40.

⁸⁶ PA, pp. 17-18.

⁸⁷ PA, p. 19.

⁸⁸ The Arabs of the Middle Ages also called it *dīvdar* and *shejret-Allah*, “the tree of God” (see HU, No. 1289).



The Cedar Cone in Assyrian Ritual. From the Palace of Ashur-nasir-pal
at Calah (Nimrûd).

Photo : Donald Macbeth]

(British Museum, London.)



The Cedar Cone in Assyrian Ritual. From the Palace of Sargon
at Khorsabad.

(Louvre Museum, Paris.)

Photo : Archives Photographiques d'Art et d'Histoire]

hadar thus means literally "the fruit of the cedar-tree," otherwise, the cedar-cone. This fruit, as appears from a number of Assyrian sculptures (see Plates VIII and IX), was used in Babylonian ritual in connection with a water libation, and certain hymns testify to its being held in veneration in Assyria. The adoption of a fruit with a Sanskrit name into Babylonian ritual ought not to cause any undue surprise, since it is known that as early as the second millennium B.C. there was a continuous current of Vedic or Early Aryan religious thought running from the Himalayas to the mountains of Asia Minor and spreading over Mesopotamia;³⁹ and, that the conception of the cedar as "the tree of God" was not unfamiliar to the Jews of the time is shown by the post-exilic Psalms lxxx. 11 (*arzei-el*, "cedars of God") and cix. 16 (*atsei-Yehovah arzei-Lebanon*, "the trees of Yahweh, the cedars of Lebanon"). I believe that, together with other religious practices adopted during their enforced stay in Babylonia, the Jews also took over into their own ritual the use of the cedar-cone as part and parcel of a water-libation ceremony. On the other hand, it is a fact that the Mishnah—the second century code of Jewish oral tradition—interprets the *peri ets hadar* as a citron (*etrog*). Josephus (c. A.D. 80) says that it was the "Persian apple"⁴⁰ that was used by the Jews during the Feast of Tabernacles; and this is confirmed by the story, told both by himself⁴¹ and by the Talmud,⁴² of how Alexander Jannaeus (104-78 B.C.), prince and high priest, was pelted with citrons by the congregation assembled in the Temple during the Feast of Tabernacles, because, in order to demonstrate the little regard he had for tradition, he intentionally spilt on the floor the libation water meant for the altar. The very earliest documentary evidence of the citron in Jewish sources is found in the representation of this fruit on coins struck by Simon the Maccabee in the fourth year of the "Redemption of Zion," that is in 136 B.C. If citrons were extensively grown in Palestine at the time, it seems probable that the centre of the industry was at Jaffa, which was until not many years ago the principal citrus growing district of the country. In 143 B.C. Simon had conquered

³⁹ HB, p. 12.⁴⁰ Antiquities, III, x, 4.⁴¹ Antiquities, XIII, xiii, 5. ⁴² Succah, 48b.

the hellenistic city of Jaffa, driven out its Greek inhabitants, and annexed the city definitely as part of the Jewish State. In 139, he obtained from the Seleucid king Antiochus VI Sidetes, his nominal suzerain, the right to issue money, and, though for the next three years his coins bear the emblem of the "lily of Sharon," in 136—the last year of his life—we find him suddenly issuing copper half-shekels, quarter shekels, and sixth-of-shekels, bearing the picture of a citron (figs. 3 and 4) together with the bundle of myrtle, willow and palm branches prescribed for use at



FIG. 3.



FIG. 4.

the Feast of Tabernacles, or with baskets filled with dates and other fruits,⁴⁸ an obvious reference to the first-fruits which, on ascending the Temple hill during the Feast of Weeks, each person was compelled to take upon his shoulder. These facts, together with the circumstance that none of Simon's successors imitated his example and that he remained the only Jewish ruler who ever represented the *etrog* on his coins in connection with the Feast of Tabernacles, appears to me to point definitely to the conclusion that it was Simon the Maccabee who substituted the citron for the cedar-cone in the Jewish ritual, and that this reform, important enough

⁴⁸ JX, p. 47.

in his eyes to be commemorated on the coinage, was effected on the occasion of the feast of Tabernacles, which fell in October 136 B.C. As to the reasons that prompted him to dare to enforce such a drastic innovation in the time-honoured ritual of a fanatically conservative people, these will probably never be known with certainty. Conder, Lord Kitchener's colleague on the Survey of Palestine carried out for the Palestine Exploration Fund in the eighties of the last century, has observed that "the lemons"—he really means the *etrog*—"somewhat remind us of the fir-cones carried by the votaries of Bacchus or Dionysos . . . The Jewish custom might have a common origin with the practices of the votaries of Dionysos, one of whose festivals occurred in autumn about the time of the Feast of Tabernacles"; and he further points out that "the solemn dancing in the Temple court, which formed part of the ritual of the Feast of Tabernacles . . . also reminds us of the feasts of Dionysos."⁴⁴ That Gentile contemporaries were impressed by striking similarities between the Jewish and the Greek festivals is evident from the writings of Plutarch (A.D. 46-120), who describes the Jews' Feast of Tabernacles as "not darkly, but openly dedicated to Bacchus, for they have a feast amongst them called *Cratophora* from carrying palm-trees, and *Thyrso-phoria*, when they enter into the Temple carrying *thyrsi*; what they do within I know not, but it is very probable that they perform the rites of Bacchus."⁴⁵ One is tempted to suppose that in the years immediately following Simon's conquest of pleasure-loving hellenistic Jaffa, some elements amongst the Jewish population—possibly those who had settled in Jaffa more than those of other districts—had developed a partiality for the Dionysos festivals with their processions during which the carrying of the thyrsos, a phallic symbol consisting of a staff crowned with a fir- or cedar-cone (Plate XXI), played a prominent part; that some of the more licentious features of the Greek feast had begun to find their way into the ritual of the Jewish festival; and that, in order to suppress the evil by doing away with all occasions for unclean associations, Simon—who was high priest as well as ruler—ordered the cedar-cone to be replaced by the citron, a fruit which, when still

⁴⁴ EJ, p. 187.⁴⁵ MD, Book IV, Question 5.

green, bears some resemblance to an unripe cedar-cone.⁴⁶ It is interesting to note that Josephus, in explaining, for the benefit of his Roman and Greek readers, that "the law of the Jews requires at the Feast of Tabernacles that every one should have branches of palm-trees and citron-trees," uses the term *thyrsos* to describe these branches.⁴⁷ The fear of unholy associations proving an incentive to sin has more than once been the underlying motive for drastic prescriptions or prohibitions by religious leaders; thus the twelfth-century physician, theologian, and moralist Maimonides, in referring to the prohibition for Jews to use citrons other than those grown from seed, explains it by the desire on the part of the Jewish lawgiver to save the people from any possible temptation to imitate some of the neighbouring races who—as we know from the spurious mediaeval Arab treatise known as the "Book of Nabataean Agriculture"—were in the habit of indulging in repulsive and immoral practices whenever they had to carry out the operation of grafting young trees.⁴⁸ The forcible substitution, by Simon the Maccabee, of the citron for the cedar-cone was, it seems, made possible by the circumstance that the Palestinian Jews of the time had ceased to know the literal meaning of the word *hadar* and were accustomed to render it by "a beautiful tree,"⁴⁹ since a Hebrew word *hadar* actually means "majesty, splendour"; and, as far as beauty was concerned, the citron-tree certainly satisfied every requirement.

Whatever may have been the reasons for the change-over from the cedar-cone to the citron, since not later than in 136 B.C. the latter was certainly used by the Jews in

⁴⁶ The resemblance is at times so obvious that the French botanist Michel (1816) in his classification of citrus fruits gave the *etrog* the scientific name of *Citrus medica conifera*. (AV, p. 3 and plate II, figs. 1 and 2.)

⁴⁷ Antiq., XIII, xiii, 5. Compare also the evidence given on p. 88 of the present volume, of the carrying of a citron-branch with buds, blossoms, and fruit attached, by dancing maidens in Roman Italy, about A.D. 70.

⁴⁸ JY, III, xxxvii (p. 337).

⁴⁹ That is how *hadar* was rendered in the Septuagint, the first Greek translation of the Bible, made by Alexandrian Jews either in the reign of Ptolemy Philadelphus (285-247 B.C.) as is commonly believed, or in that of Ptolemy Philometor (181-146 B.C.). The "fruit of a goodly tree," in the Revised Version, is taken from this earliest Greek translation.

the ritual of the Feast of Tabernacles, and since for this purpose every single member of the congregation was supposed to bring his own citron along with him to the Temple, it is obvious that by the middle of the second century B.C. the citron-tree must have been already quite common in Palestine. It follows that the complete acclimatization of the tree in Mesopotamia and in the maritime plains of Syria and Palestine must have been effected in the comparatively short time of a century and a half. The fact that in Palestine and in Syria the principal citrus growing centres were and still are located in and around precisely those towns which Alexander's successors—in the pursuance of their hellenizing policy by the assisted and perhaps forcible immigration of Greek settlers⁵⁰ and by other means—had within a very few years converted into real Greek cities, would seem to justify the view that in the beginning Greeks were the principal active agents in the acclimatization of the citron tree and the spread of its culture in the countries around the eastern Mediterranean. Soon, however, the Jews came to exert in the same sense an influence exceeding by far that of the Greeks. During the course of the last few centuries preceding the Christian era, and in a still larger measure immediately after the destruction of the Temple in Jerusalem at the hands of the Romans, numerous Jewish communities were founded all over Egypt, Syria, Asia Minor, the Aegean Islands, Greece, Italy and Northern Africa; their number and size grew rapidly through the voluntary adoption of the Jewish faith by hundreds of thousands of Roman citizens. It is estimated that at one time one out of every fifteen inhabitants of the Roman Empire was either a Jew or a Judaizer. As soon as the *etrog* was adopted into Jewish ritual as one of its indispensable requisites, all these Jewish communities became directly interested in encouraging the citron-growing industry. Yet, its acclimatization did certainly not succeed at once in all countries where Jewish settlements were to be found, and in some regions, owing to climatic or other conditions, it could never succeed at all; it was therefore to the Hebrew merchants that their co-religionists in many places had to look for the importation of the

⁵⁰ OY, p. 59.

fruits required for the Feast of Tabernacles. But, on account of the fact that only the very choicest of citrons were allowed to be used at the festival, the larger part by far of the crops was useless for ritual purposes, and other outlets had to be found for it; the same was the case for all fruit—even of the “chosen from amongst the chosen”—that remained unsold on the traders’ hands after the festival was over. It is therefore only natural to suppose that the same Jewish merchants who furnished their co-religionists with *etrogim* (plural for *etrog*) for the Feast became also the suppliers of citrons for the non-Jewish population, amongst whom a lively demand for the fruit had arisen owing to the medicinal and other virtues with which it was credited.

If Theophrastes had still reported that in his days the citron was not considered a fruit to be eaten,⁵¹ and if in the time of Pliny (c. A.D. 70) this was still in a large measure the case in Italy,⁵² from the first century onwards people began to acquire a taste for it.⁵³ It was the white inner part of the peel that was eaten. The Greeks and Romans ate it seasoned with vinegar⁵⁴ or with a kind of gravy called *garum*;⁵⁵ according to the Talmud,⁵⁶ Jewish children loved to eat the citrons that had been used at the Feast of Tabernacles, and a Jewish fable preserved in the *Midrash Tanhuma*—a collection of legends edited in the fifth century and arranged as a running commentary on the Pentateuch—proves that by the grown-up as well the citron (unless it was some other citrus) was eaten with pleasure. “Joseph,” so runs the story, “was seventeen years old and Potiphar’s wife, his mistress, tried to seduce him every day by new devices. She would change her dresses three times a day . . . and all this for no other purpose than to attract his attention. Once a number of Egyptian ladies, her friends, assembled at her home with the object of finding out whether Joseph was really as handsome as was rumoured. What did Potiphar’s wife? She gave to each of the visitors a citron and a knife, then she called Joseph and made him stand in front of her friends who, unable to turn their eyes from his beauty,

⁵¹ OW, IV, iv, 2.

⁵³ CK, III, xxvi (p. 140).

⁵⁵ MD, XVI.

⁵² MC, XII, vii, 1.

⁵⁴ GC.

⁵⁶ OR, *Succah*, III, 71.

cut their fingers while peeling the fruit. Whereupon she said to them: 'And you have seen him only for a short hour; what would you do if, like myself, you had him every day before your eyes?'⁵⁷ The Koran appropriated the Midrashic fable⁵⁸ without mentioning that the fruits in question were citrons: "And in the city, the women said, 'The wife of the Prince hath solicited her servant: he hath fired her with his love: but we clearly see her manifest error.' And when she heard their cabal, she sent to them and got ready a banquet for them, and gave each of them a knife, and said, 'Joseph show thyself to them.' And when they saw him they were amazed at him, and cut their hands and said, 'God keep us! This is no man! This is no other than a noble angel!'"⁵⁹ Whether the original Jewish source considered the fruit to be *etrogim* in the narrower sense—that is, actually citrons—or unspecified citrus fruits, we cannot say; but in oral Moslem tradition it was at times a citron and at times an orange. It is in the shape of citrons that it appears in the delightful sixteenth century Persian miniature illustrating the poet Jami's account of the incident in his romance "Yusuf and Zuleikah" (Plate X);⁶⁰ it takes the form of oranges in another picture, also Persian, but of somewhat later date (late seventeenth or early eighteenth century), in a private collection in Paris (Plate XI). Towards the beginning of the fourth century A.D., the martyr Methodios Eubulios, bishop of Olympia and later of Tyre, said, in one of his sermons, that the Jews "ought to be ashamed for thinking that they can honour God by means of citrons; why do they not take grapes, pomegranates, apples or any other fruit which is better than the citron?"⁶¹ Yet some people, it seems, would appreciate the citron as a great delicacy; thus, Apicius Caelius, the notorious second century epicure and writer on gastronomy, recommends as exceptionally delicate dishes either the white inner part of the peel of citrons mixed with silphium, water-mint, vinegar, and fish sauce, or else minced fish mixed with different herbs, vinegar, oil, spices and the white of citron-peel cut up into small square bits; he has also left a recipe for

⁵⁷ KO, *Vayeshev*.

⁵⁸ JB, p. 147.

⁵⁹ The Koran, Sura XII, 30 and 31.

⁶⁰ British Museum, MS. OR. 4535, fol. 104.

⁶¹ JT, III, p. 295.

preparing rose-scented wine⁶² by allowing citron leaves to macerate for forty days in fermenting grape-juice. Occasionally even the leaves were eaten, as is reported of certain Jews.⁶³

But it is on account of the medicinal virtues ascribed to it that the citron was mainly in demand. Scribonius Largus (c. A.D. 40), recommends, as a cure against gout,⁶⁴ external applications of citrons cooked in vinegar, then mashed, and mixed with aluminium sulphate and juice of myrrh. Galen, of Pergamum (c. A.D. 130-210), one of the most celebrated of ancient medical writers, considers the peel of the citron as a tonic for the stomach, if taken in small quantities.⁶⁵ Gargilius Martialis (c. A.D. 250) praises a famous cough-mixture⁶⁶ made of citron, licorice, rosemary, dates, figs, and other fruits; according to Virgil,⁶⁷ the Persians used citron flowers, owing to their strong and soothing fragrance, for relieving short-breathed old people. Dioscorides⁶⁸ recommends crushed citron seeds, mixed with wine, as a laxative, and he advises pregnant women to eat the fruit as a remedy against the desire, not uncommon in their case, for unusual food; whilst Soranus of Ephesus, a physician of renown and the author of several medical works still extant, who practised in Alexandria and in Rome (c. A.D. 98-138), wants them to smell a citron, before confinement.⁶⁹ Following the advice of Theophrastes,⁷⁰ many writers praise the juice of the citron, or a decoction of the fruit, as a means for "producing sweetness of breath."⁷¹ The fruit as well as the leaves, placed among clothes, were said to keep the latter from being eaten by moths.⁷² Yet, in an age where kings and queens—like the Ptolemies in Egypt—turned the art of poisoning people, and that of protecting oneself against the effects of poisons, into a real science; in an age when many wealthy Romans apparently lived, as Virgil suggests, in constant dread of "the wicked step-dame's cup, with

⁶² CD, I, iii, p. 7. LQ, XI, xv.

⁶³ JT, III, p. 303.

⁶⁴ According to LU, art. "Citrone."

⁶⁵ HU, I, p. 22.

⁶⁶ GG, XLV.

⁶⁷ PS, II, 160.

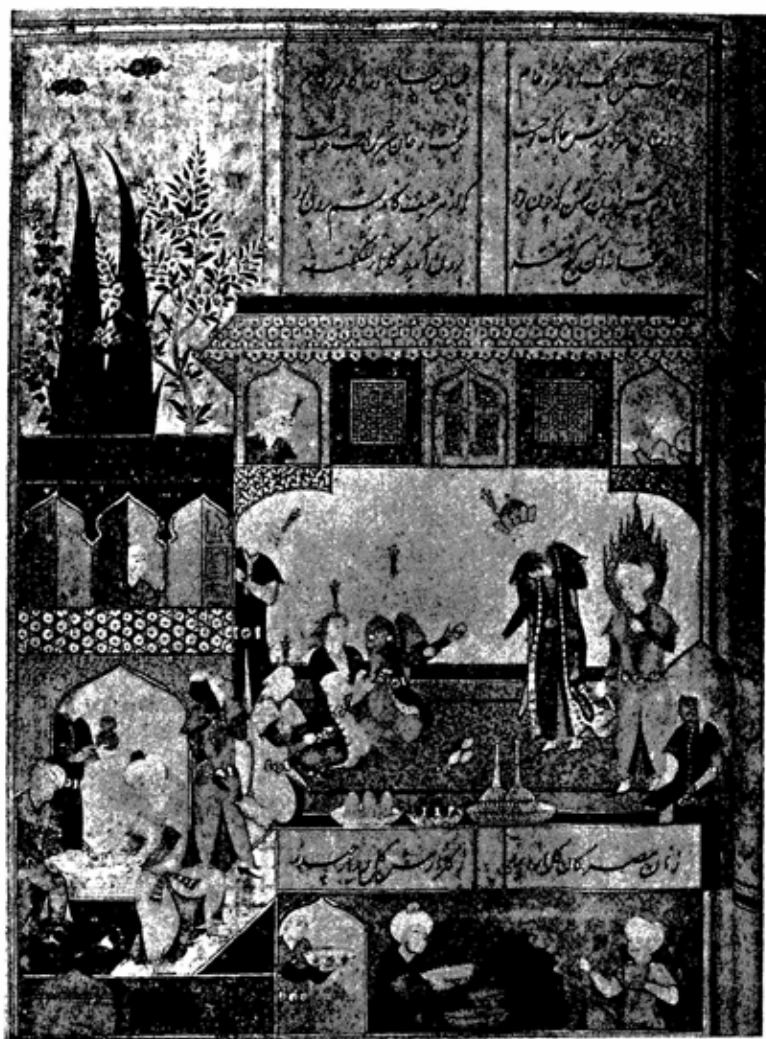
⁶⁸ FC, Book I, p. 98. (See also MC, XXIII, lvi.)

⁶⁹ According to LU, art. "Citrone."

⁷⁰ OW, IV, iv, 2.

⁷¹ PS, II, 161. MC, XII, vii, 2 and XXIII, lvi. F.C. Book I, p. 98.

⁷² OW, IV, iv, 2. MC, XII, vii, 1. FC, Book I, p. 98.



Yusuf and Zuleikah. Persian Miniature (Sixteenth Century).
(British Museum, London.)



Yusuf and Zuleikah. Persian Painting (c. A.D. 1700).
(From the Collection of Mrs. Maxa Nordau-Gruenblat, Paris,
with the kind permission of the Owner.)

poison-plants and horrid spells infused,"⁷³ in such an age there was bound to arise a great demand for fruits like the citron than which, it was believed, "no help more present is, nor power so sure to drive the deadly venom from the limbs."⁷⁴ Theophrastes had already drawn attention to the value of the citron as an antidote against all kinds of deadly poison; Pliny,⁷⁵ Dioscorides,⁷⁶ and others content themselves with practically repeating his words. A more elaborate statement of opinion—"supported by proofs"—is supplied about a century later (c. A.D. 200) by the learned Greek grammarian Athenaios of Naucratis, near Alexandria, in Egypt, in his curious and, as a source of information on the life and manners of his contemporaries of the upper classes, extremely valuable work called the "Deipnosophists," a title of which the conventional English translation is "The Banquet of the Learned." In this lengthy work written in dialogue form, Athenaios reports to a friend, with almost stenographical fidelity, the imaginary conversation that passed at an imaginary banquet given at the house of a noble Roman of the name of Laurentius, the guests including representatives of many professions such as physicians, lawyers, grammarians, philosophers of different schools, and musicians. The subjects dealt with are many and varied; but the different ingredients which entered into the preparation of the dishes that are served up, and the drinks that are offered to the guests, loom most largely in the conversation. At a given moment various sorts of "apples" are handed round, amongst them citrons, in which connection Athenaios makes Democritos, one of the guests, speak as follows:⁷⁷ "That the citron when eaten before any kind of food, whether dry or moist, is an antidote to all injurious effects, I am quite certain, having had that fact fully proved to me by my fellow-citizen, who was entrusted with the government of Egypt. He had condemned some men to be given to wild beasts, as having been convicted of being malefactors, and such men he said were only fit to be given to beasts. And as they were going into the theatre appropriated to the punishment of robbers, a woman who was selling fruit by the wayside gave them out of pity some of

⁷³ PS, II, 152-153. ⁷⁴ PS, II, 154-155. ⁷⁵ MC, XXIII, lvi.

⁷⁶ FC, I, p. 98.

⁷⁷ CK, III, xxviii (pp. 141-142).

the citron which she herself was eating, they took it and ate it, and after a little while, being exposed to some enormous and savage beasts, and bitten by asps, they suffered no injury. At which the governor was mightily astonished. And at last, examining the soldier who had charge of them whether they had eaten or drunk anything, when he learnt of him that some citron had been given to them without any evil design; on the next day he ordered some citron to be given to some of them again, and others to have none given to them. And those who ate the citron, though they were bitten, received no injury, but the others died immediately on being bitten. And this result being proved by repeated experiments, it was found that citron was an antidote to all sorts of pernicious poison. But if any one boils a whole citron with its seed in Attic honey, it is dissolved in the honey, and he who takes two or three mouthfuls of it early in the morning will never experience any evil effects from poison . . . When Democritos had said this they all marvelled at the efficacy of citron, and most of them ate it, as if they had had nothing to eat or drink before," not of course because they liked the taste of it, but, one imagines, rather as a matter of precaution against possible unpleasant surprises.

A fruit possessed of such varied and to some extent miraculous medicinal virtues was bound to give rise, amongst the common people, to all sorts of superstitious notions. To dream about an *etrog* was considered by the Jews a good omen;⁷⁸ it was a widespread popular belief with them that a pregnant woman who bit into an *etrog* would bear a male child,⁷⁹ but the children of those who ate the fruit were expected to be of a violent and irascible temper.⁸⁰

In Palestine, as has already been said, the citron was widely cultivated, and the fruit common⁸¹ and cheap. At the time of the compilation of the *Mishnah* (second century A.D.) the usual price for an *etrog* of good quality was two *perutoth*⁸² (about three-halfpence in present English currency),⁸³ as much as the price of a fig, and twice that of a pomegranate. Caesarea, the splendid port built by

⁷⁸ OR, *Berakhoth*, 57a.

⁸⁰ JT, III, p. 311.

⁸² OR, *Meila*, VI, 4.

⁷⁹ ID, art. "*etrog*."

⁸¹ JY, part I, ch. XLIII, p. 354.

⁸³ HI, p. 188.

Herod in honour of the Emperor Augustus and named after him, appears to have been one of the main centres of citron culture.⁸⁴ As an essential requisite in the perfor-



FIG. 5.

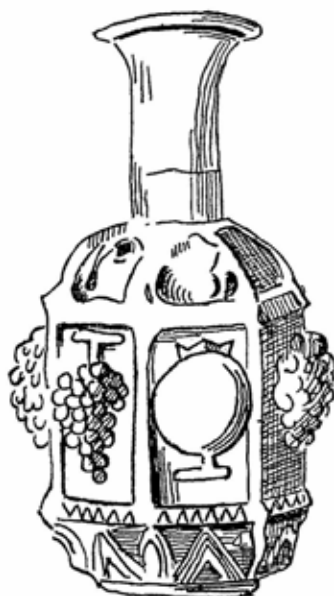


FIG. 6.

mance of the ritual at one of the principal religious festivals, the citron could hardly fail to become one of the symbols of the Jewish faith and, as such, a favourite motif

⁸⁴ OS, *Demai*, XXIIIa, 25 ff.

in Jewish art. We accordingly find it, together with other Jewish symbols such as the seven-branched candlestick and the ram's horn, on glass coins or weights now in the Bezalel Museum at Jerusalem, on a bronze seal (fig. 5), at the Musée Calvet in Avignon,⁸⁵ on precious stones like the



FIG. 7.

engraved onyx cameo reproduced by Garrucci,⁸⁶ on a small decorated glass vase (fig. 6), found at Beyrout but undoubtedly of Palestinian Jewish make,⁸⁷ on a sarcophagus from the "cemetery of the Randanini vineyard" in Rome,⁸⁸ in Greek or Latin inscriptions from Jewish tombs

⁸⁵ GJ, VI, Plate CCCCXCI, No. 16.

⁸⁶ GJ, VI, Plate CCCCXCI, No. 3.

⁸⁷ GJ, VI, Plate CCCCXCI, No. 5.

⁸⁸ GI, pp. 16 ff.

in the Roman catacombs⁸⁰ with such thoroughly hellenized or romanized names as Aurelia Quintilia, Aurelia Mara, Polycarpus, Crecentina, Lucilla, Sophronius, Nepia Marosa, Poemenius, and Zotichus the Archont. We meet it on the beautiful cups of gilded glass (fig. 7), which the Jews of the third and fourth centuries in Rome used to present to friends on festive occasions, for use in connection with the *kiddush*, the benediction over wine on Sabbath and festivals;⁸⁰ on the death of the owner, his cup was broken and buried with him. *Etrogim* (plural of *etrog*) figure on sculptured stone panels in the second century synagogue of Ashdod⁸¹ in Palestine, and in mosaics which decorated the floors of synagogues such as that of the third century at Naro (Hammâm-Lif) in Tunisia,⁸² or those of the fifth or sixth century at Jerash in Transjordan⁸³ and at Beth-Alpha in the Plain of Esdraclon,⁸⁴ discovered only a few years ago. The oldest name used by the Jews to designate the citron appears to have been *atrunga*, derived from the Persian *turunj*; we meet *atrunga* in *Atronges* or *Atrongaïos*,⁸⁵ the name of a guerilla-chieftain during the insurrection that broke out in Palestine on the death of Herod. Yet *atrunga* was evidently an unusual form, for two or three centuries later Rabbi Judah of Nehardea—the great centre of Talmudical learning in Babylonia—is quoted as having retorted to Rabbi Nahman who offered him some citrons which he called *atrunga*: "Whoever says *atrunga* betrays a goodly portion of haughtiness; either say *etrog*, as the rabbis do, or *atrogga* as the people do."⁸⁶ *Etrog* has survived as the literary form and is the one used in modern Hebrew.

In Egypt, until the conquest of the country by Alexander the Great, the land had been the property of the kings or gods. The people worked the soil as serfs, wage-earners, or temporary holders, and as such they felt no incentive to plant trees, the fruit of which, owing to the temporary

⁸⁰ CY, p. 19. CV, I, pp. 74, 75, 80, 82, 84, 88.

⁸⁰ JB, 68, fig. 5a. BL, p. 80. CG, II, ii, pp. 439 ff. GJ, VI, Plate 490. GH, Plate V, fig. 5. CV, I, p. 61.

⁸¹ IM, p. 160. IK, p. 85. ⁸² DQ, pp. 152 ff. MV, p. 273.

⁸³ LP, LXI (1929), pp. 216 ff. QL, I, ii. OM, fig. 28, p. 25.

⁸⁴ OM, Plate VIII. ⁸⁵ II, XVII, x, 7. ⁸⁶ OR, *Kiddushin*, 70a.

nature of their leases, they had no certainty of ever being able to enjoy. When Alexander's empire was divided amongst his generals, and the Ptolemies had received Egypt for their inheritance, conditions of land tenure underwent a radical change. As an inevitable result of the long period of wars which had just come to an end, the Ptolemies found themselves confronted with the serious problem of how to deal with their tens of thousands of mercenary Greek soldiers, officers as well as privates, in such a way that they should not fall a burden on the financial resources of the State and yet remain, within easy reach, at the disposal of the king for mobilization in case of need. They were accordingly settled on the land and given small farms to work, mostly in the Fayum and in the Delta, where by skilful engineering work large tracts of land were reclaimed, that had formerly been desert or marsh. As a rule the soil there was better adapted to the cultivation of the vine and fruit trees than to the growing of corn. Besides the soldiers, who came either from continental Greece or from the Ionian States of Asia Minor, were already familiar with fruit-growing in its various branches; the State now directly encouraged them to do so by allowing them to become owners of their plots, instead of mere temporary holders, if they planted them with vines and trees. Such a policy could not but be crowned with immediate success; the soldiers seized the opportunity offered them, and within a very short time whole districts were literally turned into vineyards, olive-groves, and orchards.⁹⁷ There is every reason to suppose that the acclimatization of the citron-tree in Egypt was the work of these Greek military settlers, some of whom at least must have seen the tree, and learned the manner of cultivating it, during Alexander's Persian campaign. The chiselled silver dish (Plate XII), which was found in Boscoreale near Pompei and belongs at present to the collections of the Louvre Museum in Paris, permits, it seems, the conclusion to be drawn that towards the end of the first century A.D. the citron must already have been considered a fruit commonly grown in Egypt. The dish in question represents—in the shape of a beautiful, stern-looking woman—the goddess Attis personifying the city of

⁹⁷ NC, pp. 261-262.

Alexandria, accompanied by a number of attributes symbolizing the principal agricultural and commercial activities to which that city owed its enormous wealth. Thus in her lap she holds various fruits, amongst which grapes, pomegranates, figs, and citrons are easily recognizable.⁹⁸ The extracts already given (see p. 61) from the "Deipnosophists" of Athenaios show that towards the end of the second century A.D. the citron was thoroughly naturalized in the country. This impression is further confirmed by two documents of the third century, written in Greek, which have been published together with an English translation in Grenfell and Hunt's "Oxyrrhynchus Papyri." The most ancient of these documents, which belongs to the early part of the century, is a fragment of an anonymous letter remaining incomplete, in which reference is made to some young peach and citron trees.⁹⁹ The other papyrus is an agreement dated A.D. 280, by which three persons undertake to continue for a year the lease of (a) the prunings from a young vineyard and adjacent reed-plantation in return for a payment in money, grain, and wine, and (b) the produce of the older part of the vineyard which contains palms and other fruit-trees and for which a rent is paid in the shape of a part of the fruit, as follows: "And we likewise undertake to lease for one year the produce of the date-palms and all the fruit-trees which are in the old vineyard, for which we shall pay as a special rent one and a half artabae of fresh dates, one and a half artabae of pressed dates, one and a half artabae of wall-nut dates, one and a half artabae of black olives, 500 selected peaches, 15 citrons, 400 figs before the inundation, 500 winter figs, four large white fat melons . . ."¹⁰⁰ A few years later, we find the growing of citrons mentioned again in a quaint Coptic papyrus belonging to the library of the

⁹⁸ Because the crescent that crowns the Cornucopia held by the goddess in her left hand is attached to a cedar-cone—her well-known attribute—the oval fruit in her lap is generally taken to be a cedar-cone as well (see NC, p. 252). I do not think that this interpretation is correct; for, since the goddess is carrying already a cedar-cone there was no sense on the part of the artist in representing it a second time, and especially mixed together with ordinary Egyptian fruits; the more so as the cedar was not grown in Egypt, whilst the citron was.

⁹⁹ GW, p. 183, No. 1764.

¹⁰⁰ GW, p. 15, No. 1631.

Vatican, part of which was published in 1885 together with a French translation by E. Amélineau under the title "The Journey of an Egyptian Monk in the Desert." The Monk was taking a walk one day in the desert of the Thebaid, when he came to a cool oasis watered by a spring. "I sat down to rest a little. Close to the fountain people had planted trees. I looked at the fruit they were bearing, saying to myself: who can it be that has planted these here? For there were palm trees, citron trees, pomegranate trees, fig trees, apple trees, vines, peach trees, jujube trees, and a multitude of others, the fruit of which had a taste as sweet as honey. There were also myrtles planted in the centre, with other trees giving off an exquisite fragrance. The fountain sent its water to irrigate all these trees, so that the thought came to my heart that this was God's Paradise. I remained seated, admiring the trees... I stayed seven days... eating the fruit of the trees."¹⁰¹ The name of the citron-tree, in this story, is *kitri*. The manuscript is dated A.D. 979, but careful research has led the editor to the conclusion that the narrative was actually composed at the beginning of the fourth century.¹⁰² The document shows that, at the time, the citron was commonly grown by the peasants of Upper Egypt, a fact which in itself may be taken as sufficient proof that the culture of the tree had been established in Egypt for a long time.¹⁰³ The occurrence of such terms as *kitreos* and *kitrinos*—meaning "citron-coloured"—in Graeco-Egyptian papyri of the sixth century,¹⁰⁴ further confirms this view; because it is only when an object is native or has at least become thoroughly naturalized in a country, that its name is used in the vernacular to designate the corresponding and characteristic colour.

In some of the countries west of Egypt the citron-tree appears to have become acclimatized at a comparatively early date, and, as has been said before, there can hardly be any doubt that this acclimatization was achieved through the agency of the Greek and Jewish communities established in the principal cities along the coast. Yet, definite information about the citron in those regions is very scarce; in fact, it seems to amount to no more than just two passing references in the writings of king Juba of

¹⁰¹ BZ, p. 185. ¹⁰² BZ, p. 189. ¹⁰³ AU, p. 260. ¹⁰⁴ MI

Mauretania and of Apuleius. Juba II (c. 50 B.C.—A.D. 24), who as a child was carried to Rome to grace Caesar's triumph, received there a good education under the care of Augustus who, in 29 B.C., bestowed upon him the hand of Cleopatra Selene, daughter of Antony and Cleopatra, and reinstated him in his paternal kingdom of Numidia, which he however exchanged for that of Mauretania five years later. Juba was one of the most learned men of his day; he wrote many historical and geographical works, of which some seem to have been voluminous and of considerable value owing to the sources to which their author had access; but all these works have been lost, and we know of them only through references in other writers. In Athenaios' "Deipnosophists," which we have had occasion to quote more than once already, Aemilianus, one of the guests, says that "Jobas (= Juba) the king of the Mauretanians, a man of the most extensive learning, in his History of Libya, does mention the citron, saying that it is called among the Libyans the Hesperian apple, and that they were citrons which Hercules carried into Greece, and which obtained the name of golden apples on account of their colour and appearance."¹⁰⁵ Does this passage not imply that, when Juba wrote his Libyan history, the citron must already have been naturalized since a considerable time in the Mediterranean regions of Africa? On the other hand, Servius, a learned Roman grammarian of the fourth century A.D., quotes in his commentary on Virgil's Georgics¹⁰⁶ a passage from a lost work "*De arboribus*" by Lucius Apuleius (born in Madaura in Numidia about A.D. 125), wherein the latter protested against the citron being called *citrus*, a name which properly belonged to quite a different tree.

In the Ionian states of Asia Minor the science of horticulture seems to have been far in advance of that in other Mediterranean countries, mainly no doubt owing to their early incorporation into the Persian Empire. It is on record that Darius I gave special praise to a Persian provincial governor in Asia Minor for having succeeded to acclimatize there, in a *peridaisos* created in the Persian style, various sorts of fruit-trees brought from beyond the

¹⁰⁵ CK, III, xxv, p. 139.

¹⁰⁶ According to LU, art. "Citrone."

Euphrates.¹⁰⁷ Moreover, the armies of the Seleucids and the Ptolemies were to a large extent composed of Ionian mercenaries of whom many must have had ample opportunities for observing the citron-tree growing either in Persia itself or at least in Babylonia where apparently it was just being naturalized. It is therefore only natural that the Cilician physician Dioscorides should, in his "*Materia medica*," which was probably written between A.D. 60 and 79, start the paragraph on the citron in the following manner which shows that in his days the tree can no longer have been an exceptional feature in the orchards of his country: "the Median Apples, or *kedromela*, which the Latins call *citria*, which everybody knows . . ." ¹⁰⁸

¹⁰⁷ HQ, pp. 92-93. GU, I, p. 75. ¹⁰⁸ FC, I, cxxxii, p. 98.

CHAPTER III.

THE ACCLIMATIZATION OF THE CITRON IN SOUTHERN EUROPE.

SINCE Theophrastus, unfortunately not a single purely botanical work has been produced by Greek writers; had they done so, we might have had some reliable information as to when and how the citron became naturalized in Greece itself as distinct from her Ionian colonies in Asia Minor. That it occurred soon after the acclimatization of the tree in Babylonia by the Greeks of Alexander's army may be taken for granted, also that the tree flourished better in the Peloponnesus than in the colder regions further north. In fact Pamphilos, a Greek grammarian of the first century A.D., is quoted in Athenaios' "Deipnosophists" as having written that at Sparta (in the southern part of the Peloponnesus) they set before the gods, as offerings, certain apples called *epimelis*, which "have a sweet smell, but are not very good to eat; and are called the apples of the Hesperides;"¹ and Athenaios mentions another Greek writer, one Aristocrates, the author of a work called "The Affairs of Lacedaemon," who is also said to have mentioned, among the fruits which the Spartans were in the habit of offering to the gods, one called by him *epimelis* "and beside that apples, and those which are called Hesperides."² Athenaios' quotation from Juba as to the identity of the citron with the golden apples of the Hesperides, as well as the much older hint to the same effect in the "Boeotians" of Antiphanes (see p. 47), have naturally given rise to the belief that the "apples" mentioned by Pamphilos and Aristocrates as being also called Hesperides were none other than citrons. Does a closer examination of such information as is available lend support to this view? If, in the "Boeotians,"⁴ to the remark of the maiden who receives the citrons "I thought it came from the Hesperides, for there they say

¹ CK, III, xxiii, p. 138.² CK, III, xxiii, p. 138.³ LA, p. 59.⁴ See p. 47.

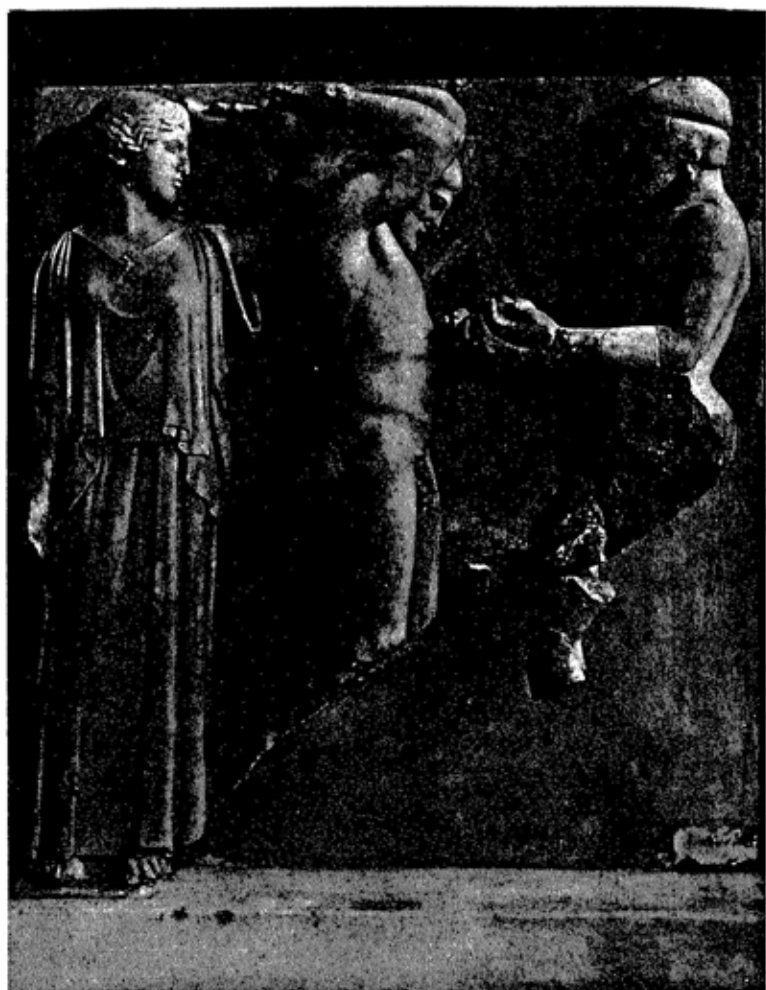
the golden apples grow," her lover replies that "they (i.e. the daughters of Hesperus) have but three apples," does this not show that the Greeks of the fourth century B.C. did not consider the citron identical with the Hesperidean fruit? That Athenaios, on the other hand, failed to see any connection between the citron and the "apples of the Hesperides" offered to the gods in Sparta is clear enough from the fact that he mentions the statements by Pamphilos and Aristocrates concerning them, not in his chapter on the citron, but in the one on real apples and quinces, which is separated from the chapter on the citron by one on walnuts and peaches. But why argue about the interpretation of possibly not quite lucid sentences of ancient writers when the sculptural monuments of ancient Greece and the coinage of Imperial Rome provide a categorical and irrefutable answer to the question? When in that succession of memorable battles which turned the tide of history—Marathon (490), Salamis (480), and Platea (479 B.C.)—the united forces of Hellas had at last beaten off for good the Persian onslaught, the Greeks, in a spirit of thankfulness towards the gods for their assistance, raised to Zeus, at Olympia in the Peloponnesus, a temple on the construction and embellishment of which the talent and skill of the best of Greek artists and craftsmen were lavished. In order appropriately to commemorate their triumph in the face of almost superhuman difficulties and dangers to which they knew of no better parallel than that afforded by the legendary exploits of Herakles himself, they had the full story of that hero's famous twelve labours carved on the twelve marble metopes of the temple. The building, which was one of the noblest creations of Greek art at its zenith, is to-day ruined, but the geographer Pausanias (second century A.D.), who saw it still in its original state, has left us a detailed description of it.⁵ The best preserved of all the metopes is that which illustrates Pherekides' version, reproduced by Appollodorus in his "Library," of the story of how Herakles won the golden apples of the Hesperides⁶ (Plate XIII): the hero, who carries on his head and shoulders a cushion on which rest the sky, is shown looking down on four quinces which

⁵ Book V, Elis I, ch. x, 9 (LV, Vol. I, p. 251).

⁶ CE, II, v, 11.



The Goddess Attis, Personifying the City of Alexandria. Silver Dish from Boscoreale (c. A.D. 100).



Herakles receives from Atlas the Golden Apples of the Hesperides
Metope from the Zeus Temple at Olympia.

Photo : Alinari]



The Farnese Herakles.

Photo : Anderson]

(Museo Nazionale, Naples.)



The Farnese Herakles (Detail).

Photo : Anderson]

Atlas holds out to him. The temple of Olympia was completed about 450 B.C.: at that time, therefore, the Greeks considered the apples of the Hesperides to have been quinces, and not citrons. A little more than a century later, Lysippos, of Sicyon in the Peloponnesus, an artist patronized by Alexander the Great, and one of the most distinguished of Greek statuary, carved a giant Herakles of whom the National Museum at Naples owns a Hellenistic rendering—the famous “Farnese Herakles”—executed by the Athenian sculptor Glykon sometime during the first century B.C. (Plates XIV and XV). The hero, whose massive strength Glykon has tried to express—in accordance with the tastes of the uneducated Roman buyers of his day⁷—by immense exaggeration of muscular development, is represented on his return from the garden of the Hesperides, carrying three quinces in his right hand, which he holds behind his back. Thus, at the time of Lysippos, which was also that of Antiphanes (second half of the fourth century B.C.), the apples of the Hesperides were still looked upon as being quinces, and not citrons. Things look different when we come to the second century A.D. In his treatise on Citrus Fruits published in Rome in 1641, the learned Jesuit priest J. B. Ferrarius has reproduced with a praiseworthy accuracy of detail coins of the emperors Antoninus Pius, A.D. 138-161, (fig. 8), Commodus, 180-192, (fig. 9), and Geta (at the time when the latter had already received the title of Caesar but not yet those of Imperator and Augustus, i.e., between A.D. 198 and 209 (fig. 10). On the reverse of all these three coins Herakles is represented standing in front of the tree with the golden apples, either actually picking the fruit, or offering a sacrifice, or fighting the water-snake of Lerna; but in all three cases the shape of the leaves and the manner of their insertion on the stalk, as well as the method of insertion of the fruit itself on the branch, are more reminiscent of young citrus trees (fig. 10),⁸ than of quinces or of apples. Since on the latest in date of the coins, namely that of the emperor Geta, the inscription is in Greek—that is to say that this coin was actually struck in a Greek mint—it may be assumed that during the latter half of the second century A.D. both in Greece and in Rome the fruit of the

⁷ EY, p. 70.

⁸ AJ, Plate of coins opposite p. 22.



FIG. 8.



FIG. 9.



FIG. 10.

citrus tree was considered as being identical with the golden apples of the Hesperides. That by that time the culture of the tree must have been well established in Greece is evident from the writings of the Greek agronomist Florentinus, the author of an agricultural treatise in at least eleven books,⁹ which it is believed was written by him about A.D. 220; the original of the work is lost, but fortunately a few passages have been preserved thanks to Cassianos Bassos, the tenth century author of the Byzantine *Geoponica*, a compilation which contains, together with extracts from the writings of many other ancient authors, 81 quotations from the *Geoponica* of Florentinus.¹⁰ Judging him in the light of the fragments thus preserved, Florentinus appears to have been an intelligent agriculturist who had experimented a great lot, and retained that which he found to be best. At the same time he was superstitious like all his contemporaries, whilst an inborn fondness for curiosities made him try to realize fanciful monster plants by means of grafts or other unions between distant species. Just as he inserted hellebore into the stem of vines in order to obtain grapes that would produce a naturally laxative wine, and red sulphide of mercury into the bulbs of lilies in the hope of securing red flowers,¹¹ so did he think it possible to produce citrons of various colours by means of adequate combinations of rootstock and scion: "If you wish to make citrons black, graft a branch of an apple-tree on the citron, and *vice-versa*; and the apple may become so, the citron-tree having been thus grafted, and *vice-versa* . . . But if you wish to make citrons red, graft them on the mulberry, and *vice-versa*, and the citrons become red and the tree will produce either kind of fruit. The citron is also grafted on the pomegranate."¹² It must of course be said in fairness to Florentinus that his partiality for fanciful graftings was a trait common to many of his contemporaries and even to some of his predecessors; still, the fact remains that he appears to have been the first author who gave, to what had until then been just a sport, the powerful backing of agricultural science, with the result that for more than a thousand years after his time botanical writers in

⁹ LU, VI, p. 2756.

¹¹ GL, XI, xx, 6.

¹⁰ LU VII, p. 1221.

¹² GL, X, vii.

different countries have unhesitatingly repeated his instructions for the realization of impossible hybridizations.¹⁸ But, as already said, allowing for these physiological vagaries as products of the spirit of the times in which he lived, one must give credit to Florentinus for many valuable hints he gave his contemporaries on technical problems of citriculture. "This above all trees is aided by a southern aspect, and it is hurt by the north wind. But when the crop of fruit is heavy, it is proper to gather a great part of it, and to leave only a few, for thus they are better nourished. But it is necessary to plant these against walls, that they may be defended from the north; and they are covered during the winter with mats, and very commonly with the haulm of gourds, for it has certain natural resisting power to keep them unhurt in the cold. . . . This plant if it is touched by the frost, being naturally tender, when frost bitten perishes. Some of the rich and luxurious indeed plant their citrons against the wall in houses (= under porticos) facing the sun and give them plenty of water: and in the summer they leave the houses uncovered, affording the plants the benefit of the sun; and when the winter approaches, they cover the plants."¹⁴ Florentinus speaks, as will be noticed, of the citron not only as a tree that is cultivated in the South, but also in more northern regions, where it was already grown in his time exactly in the same manner as is still in use to-day in the *giardini* along the shores of the Lago Maggiore and the Lago di Garda, at the foot of the Italian Alps. It is these comparatively primitive structures described by Florentinus, elaborated and improved by the gardeners of the time of the Renaissance, that ultimately developed into the elaborate and costly "orangery" or "orange house" of every self-respecting royal or princely park in seventeenth or eighteenth century Europe. In

¹⁸ In a South African newspaper (*The Cape Argus* of May 31, 1924) the following information was vouchsafed to the readers: "The blood orange is obtained by grafting the sweet orange on to the stem of the pomegranate. This blending of fruits gives the peculiar tint of pomegranate juice to the juice of the blood orange, and some tastes are so sensitive as to detect the somewhat astringent flavour of the pomegranate in the more luscious juice of the oranges!"

¹⁴ GL, X, vii.

the days of Florentinus, the citron-tree was not propagated by budding but by grafting: "It is also proper to know, that the citron, when inoculated (= budded), is sterile; it is therefore proper to graft it in the wood in the same manner as you graft vines."¹⁵ Means had already been devised for preserving the fruit, for many months, in good condition: "If you cover the fruit with well-wrought gypsum, you will preserve it unhurt all the year."¹⁶ All these details, but especially the invention of how to grow citrons in colder regions, imply that the culture of the tree had been established a long time before, at least in the southern and warmer parts of Greece. Thus, after all, the sort of apples that "have a sweet smell, but are not very good to eat, and are called the apples of the Hesperides," which according to Pamphilos and Aristocrates (see p. 71) were set before the gods in Lacedaemon not later than the first century A.D., may well have been the fruit of the citron-tree. If so, then we have here a Greek counterpart to the ritual use of the *etrog* by the Jews. One is tempted to recall, in this connection, the letter which a Spartan king sent (c. 180 B.C.) to the then High-Priest of the Temple in Jerusalem, in which stress is laid on a supposed common origin of the Lacedaemonians and the Jews;¹⁷ also that other letter, containing a similar suggestion, sent to the Senate of Sparta by Jonathan the Maccabee in 143 B.C. shortly after his brother Simon had conquered the town of Jaffa,¹⁸ the same Simon, that is, who substituted the citron for the cedar-cone in the ritual of the Feast of Tabernacles; and, lastly, the close friendship which seems to have existed between Judaea and Sparta down to the time of Augustus, as witness the beautiful buildings which Herod the Great is said to have built in Sparta during the last years of the first century B.C.¹⁹

As to Roman Italy, the story of her connection with the citron-tree starts with a most extraordinary philological *quid pro quo*, the effect of which has been to introduce into Latin, and ultimately into almost every single European language, the most irrational designations for the citron-tree. In the fifth book of his "Enquiry into Plants," Theophrastes gave the description of a conifer,

¹⁵ GL, X, vii.¹⁶ GL, X, vii.¹⁷ II, XII, iv, 10.¹⁸ I Maccabees, XV, 23.¹⁹ NQ, I, p. 391.

the *thya*—the one we call to-day by the botanical name of *thuia*—which, he says, “grows near the temple of Zeus Ammon and in the district of Cyrene. In appearance the tree is like the cypress, alike in its branches, its leaves, its stem, and its fruit; or rather it is like a wild cypress. . . . The wood is absolutely proof against decay, and the root is of very compact texture, and they make of it the most valuable articles.”²⁰ Because of its remarkable powers of resistance to decay, the Egyptians used this wood, as they did with that of the cedar, for the manufacture of mummy cases. Of a variety of this tree—the *Callitris quadrivalvis* Vent. (*Thuia articulata* Vahl), which forms extensive forests in the mountainous regions of the Atlas in northern Africa, and which the Romans called *cedrus*, or *citrus*, from the Greek *kedros* for “cedar,” the Carthaginians at an early date used the wood for the extraction of an essential oil, which they exported to other countries, and especially to Italy, for the purpose of preserving different kinds of wood and timber from decay.²¹ Pliny²² says that the Books of Numa, which were rediscovered in Rome 535 years after they had been written, were still in a perfect state of preservation owing to their having been saturated with this oil, a circumstance which led the poet Horace to coin the expression *carmina linenda cedro* for “poems deserving of immortality,” and another poet, Persius, to use the words *cedro digna loqui* for “to speak words deserving of immortality.” Woollen tunics also were treated with the oil, or were stored away together with chips of the wood, as seems to be implied by the expression *citrosa vestis* used by Naevius in his epic on the first Punic War;²³ the most common use of the wood consisted however in turning it into chests for keeping woollen clothes from being attacked by moths. In the first century B.C., there arose among the wealthy people in Rome a strong demand for furniture made of this wood, not so much by reason of its pleasant fragrance as on account of the beautiful and characteristic veining of the knotty parts of the lower trunk and the roots. It was the latter, especially, that were used for the manufacture of tables and of *triclinia*, couches used for reclining on at meals. Accord-

²⁰ OW, V, iii, 7.

²² MC, XIII, xiii.

²¹ ED, p. 144.

²³ JW, II, xix, 4.

ing to the pattern formed by the veining, the tables were called tigered, pantherine, and other similar fancy descriptions;²⁴ on the type and beauty of the design and on the size of the plate depended the value of the table, which, according to statistical data collected by Pliny,²⁵ occasionally reached such high figures as 1,000,000 sesterii (£8,000) and more. Soon the passion for these tables spread to such an extent that there is hardly a writer of importance, during the second half of the first century A.D., who does not feel himself constrained to raise his voice in protest against the fashion; thus, Petronius, *elegantiae arbiter*, i.e. Director-in-Chief of Imperial Pleasures under Nero, inveighs against the banqueters "who crowd around mottled tables, the price of which exceeds their weight in gold,"²⁶ and Pliny²⁷ writes (c. A.D. 70) that "the tables made of this wood have given rise to that extravagant mania with which the women reproach the men when these chide them about their pearls." Just as the Greeks called *kedros* not only the cedar but quite a number of other conifers, so did the Latins apply the names *cedrus* or *citrus* to a variety of trees, including the Atlantic cedar and *Callitris quadrivalvis*. Thus were Numa's Books said to be *cedratos* and Naevius' tunics described as *citrosa vestis*, whilst Pliny calls the notorious tables *mensae cedrinae*, and sometimes *mensa citrea*.

It was in Greece or in the Hellenistic cities of Syria, Palestine, and Egypt that the Romans first became acquainted with the fruit which the inhabitants of those countries called, as Theophrastes had done, the "Median" or "Persian" apple; the Romans quite naturally adopted this name, and so we find that Virgil, who was the first Latin writer who mentioned this new tree, refers to it as the "Median Apple Tree";²⁸ this happened about 35 B.C. A hundred years later, between A.D. 70 and 79, Pliny still calls the fruit *malum medicum*,²⁹ and the tree *malus medica* or *malus assyria*;³⁰ but he uses these expressions only exceptionally, namely, once when he wishes to give the reader a literal translation of Theophrastes' text,³⁰ and, a second time, when he explains that the Greeks apply the

²⁴ MC, XIII, xxx.

²⁷ MC, XIII, xxix.

²⁵ MC, XIII, xxix.

²⁸ PS, II, p. 150.

³⁰ MC, XII, 7.

²⁶ I.Y. CXIX.

²⁹ MC, XV, 14.

name of *malum medicum* to the fruit which his own countrymen know as *citreum*.³¹ As a rule, Pliny calls the tree *citrus*³² or *citrea*,³³ and the fruit *malum citreum*³⁴ or just *citreum*.³⁵ Pliny's Greek contemporary Pedanius Dioscorides—born in Anazarba in Asia Minor and educated in Alexandria, the author of a celebrated treatise on *Materia Medica* which, it is believed, he wrote between A.D. 60 and 79—speaks of the "*Median and Persian Apple*, or *kedromelon* (= cedar apple), and which the Romans call *kitrion*"³⁶ (= the Latin *citreum*, grecized); the impression one obtains is that *kedromelon* was a well-established colloquial name. The historian Josephus, in his "*Antiquities of the Jews*," which he wrote in Rome in the Greek language between A.D. 79 and 93, uses the name *kitrion* for the citron-tree in a manner which implies that this was the Greek equivalent of the name by which the tree was commonly known to the Romans;³⁷ and, according to Athenaios, Pamphilus—a Greek grammarian of the first century A.D. and author of a *Dictionary of Foreign and Obscure Words* in 95 books—wrote that the Romans called the Median apple not *kitrion*, but *kitron*.³⁸ As a matter of fact, after Pliny no Latin writer ever used the expression "*Median apple*": the fruit was called either *citreum*, as by Scribonius Largus³⁹ (first century), Gargilius Martialis⁴⁰ (third century), Palladius⁴¹ and Macrobius⁴² (fourth century), or *citrium* as in the Edict of Diocletian (VI, 75)⁴³ and in the writings of Apicius⁴⁴ (both third century), or *cedrium* as in occasional Roman inscriptions;⁴⁵ the tree itself was styled *citrus* as in Gargilius Martialis,⁴⁶ Apicius⁴⁷ and Palladius.⁴⁸ Not so with the Greeks, who continued to use the expression "*Median apple*" until well into the second century A.D., when *kitrion* became the common name; the conservatism of certain writers who would insist on saying "*Median apple*" is derided by Galen (about A.D. 130-200): "the fruit of this tree has ceased to

³¹ MC, XV, 14.³² MC, XIII, 31.³³ MC, XVI, 44.³⁴ MC, XV, 14.³⁵ MC, XXIII, 56.³⁶ FC, I, 166.³⁷ II, XIII, xiii, § 5.³⁸ CK, III, 29.³⁹ LU, art. "*Citrone*."⁴⁰ GG, XLV.⁴¹ LR, IV, x, 15.⁴² JW, III, xix.⁴³ LU, art. "*Citrone*."⁴⁴ CD, IV.⁴⁵ *Corp. gloss. lat.* III, 358, 75 and 609, 10 (See LU, art. "*Citrone*").⁴⁶ GG, XIII, xxxvii.⁴⁷ CD, IV.⁴⁸ LR, IV, x, 11.

be called Median apple; everybody now calls it *kitrion*.⁴⁰ . . . It is called Median apple by those who, whilst admitting that clearness is one of the virtues of good style, seem nevertheless to be taking especial trouble to be unintelligible."⁵⁰ . . . Very soon, the name "Median apple" had altogether fallen into oblivion and had even ceased to be understood at all: indeed, Athenaios, who wrote only a few decades after Galen, after quoting Theophrastes' description of the tree and the medicinal virtues of the fruit, found it necessary to add that he was "induced by these things, and by what Theophrastes says of the colour and smell and leaves, . . . to believe that the fruit meant by him is the citron."⁵¹ From the third century onwards, the only Greek names still in use are *kitrea* for the fruit, and *kitron* or *kitrion* for the tree; and, if now and then the question arose in some inquisitive person's mind as to how a name which seemed to be derived from *kedros*, or cedar, could fit a tree so totally different from that giant conifer, curiosity was appeased by the answer that "Phaenias the Eresian, in the fifth book of his treatise on plants, says that the cedar has thorns around its leaves; and that the same is the case with the citron is visible to everybody."⁵²

In reviewing this evolution of the colloquial names for the citron-tree and its fruit amongst the Greek and Latin-speaking nations, the impression one obtains is that, around the beginning of the Christian era, the common Greek name was *kedromelon*, that is, "cedar-apple"; that the Romans merely translated this name into Latin when they coined the name of *malum citreum* or just *citreum*, and that it was this expression that became naturalized in the Greek-speaking countries in the shape of *kitrea*. In vain did Apuleius, who was born in Africa and spent there most of his life, and who therefore knew the *Callitris quadrivalvis* in its natural home, vehemently protest against the name *citrus* being applied to the "Median-apple" tree which had nothing in common with the conifer that produced the precious wood: the public had become accustomed to one name for both trees, and would

⁴⁰ GD, VII, 19 (Vol. XII, p. 77).

⁵⁰ GC, II, 37 (Vol. VI, pp. 617-618).

⁵¹ CK, III, 26.

⁵² CK, III, 28.

not listen to philological arguments. Of course, in those regions of Italy where the citron tree was actually naturalized, then in Italy generally and in other countries where the Latin tongue held sway, people sooner or later did realize that the golden apples came from another tree than that which produced the mottled or pantherine tables of their ancestors. But writers of subsequent ages, who set themselves the task of translating the Latin classics into other languages, or who used them as sources for the study of the history and economics of the Roman Empire, failed to appreciate the difference between *citrus* and *citrus*, and many of them including even a number of present-day writers—have translated this name, wherever they met it, by “citron tree,” whilst others, especially in the Middle Ages, have actually thought the citron to be the fruit of a kind of cedar tree. Macrobius, a Roman grammarian who lived about A.D. 400, knowing that the tree which produced the precious wood and which in Latin was called *citrus* was none other than that which Theophrastes had described under the name of *thya*, and that this latter was identical with the *thyon* of Homer the oil of which was used to preserve woollen clothes, attributes to that poet (c. 900 B.C.) a reference to “citrus-scented raiments.”⁵³ In Risso and Poiteau’s “Histoire naturelle des Orangers” (Paris 1818), which is otherwise a real classic as far as the botany of the genus *citrus* is concerned, we find it stated on the authority of Pliny that the Romans paid enormous sums for tables made of citron-wood from the Atlas Mountains in Africa, and, on the authority of Martial, that in his days the price of a golden table was less than that of a table of citron-wood;⁵⁴ in C. D. Yonge’s translation of Athenaios’ “Deipnosophists” (H. G. Bohn, London, 1854), we are told that Hiero, king of the Syracusans (270-216 B.C.) built a huge and very luxurious ship containing a Venus-temple the doors of which were made of ivory and citron-wood;⁵⁵ in M. Desprès’ French translation of Velleius Paterculus’ Roman History (Ed. Panckoucke, Paris 1825) we read that in Caesar’s triumphal procession through Rome the trophies referring to his victories in Gaul were made of citron-wood,⁵⁶ and on this

⁵³ JW, II, xv, 5.⁵⁵ CK, vol. I, p. 330.⁵⁴ BE, p. 257.⁵⁶ PO, II, lvi.

mistranslation several modern French writers have based themselves in order to assert that the citron was grown in Gaul in Caesar's time. A similar error is to be found repeated several times in Adlington's translation (1566) of Apuleius' "Golden Ass," and has been reprinted without any attempt at correction by present-day publishers.⁵⁷ Jacques de Vitry, Bishop of Acre (Palestine) from 1217 to 1227, and subsequently Cardinal Bishop of Tusculum, Papal Legate in France and Germany, and Patriarch of Jerusalem, wrote, in his History of the Crusades: "the cedars of Lebanon are very fine trees, which rise to a very great height, but they do not bear fruit; other cedars, which are named sea-cedars, are small, but they bear many fruits, and these, which are very beautiful and very good for man, are called citrons or citron-apples;"⁵⁸ and in several books of "Litanies of the Virgin," printed in France in the early sixteenth century we find pictures of the Virgin surrounded by a number of symbols of purity taken from the Song of Songs, among which the allegorical Cedar of Lebanon is represented in the shape of a citron tree. This *quid pro quo*, which the Romans inherited from the Greeks and passed on to the other Latin races, has been perpetuated in the vocabulary of most European languages: in seventeenth century France a drink made of citron-juice, water, and sugar was called *eau de cèdre*, which means literally "cedar-water," and even the modern French name of the citron is *cédrot*, that is, "fruit of the cedar"; the Germans call the citron *Zedratzitrone*, or "cedar-citron"; and the Italians to this day have one name, namely *cedro*, for both the cedar and the citron-tree. Modern science itself accorded this confusion of terms the sanction of its authority when Linné gave the name of *Citrus* to the whole species which comprises citrons, lemons, oranges, mandarines, shaddocks, grapefruit, and their like.

But if the Romans inherited this *quid pro quo* from the Greeks, how did the latter come to give the name of "cedar-apple" (*kedromelon*) to the fruit of a tree which they perfectly well knew had nothing in common with the cedar? I am tempted to believe that in some way or other this curious confusion of terms had its origin in the forcible

⁵⁷ CF, II, xix (p. 77); V, i (p. 201); XI, xvi (p. 565).

⁵⁸ PT, p. 177.

substitution of the citron for the cedar-cone in the ritual of the Jewish feast of Tabernacles during the second century B.C. (see p. 55).

Towards the beginning of the third century B.C., Rome, having subjected to her rule the whole of Italy, rose to the consciousness of her role as more than a purely continental power and began to look towards the sea and the countries that lay beyond it as new outlets for the energy and spirit of enterprise of her people. Within little more than a century, the tremendous effort of three Punic Wars, culminating in the destruction of Carthage, the establishment of Roman political hegemony over Greece and Asia Minor, and the imposition, in 168 B.C., of a *de facto* protectorate over Egypt, made Rome the undisputed mistress of the Mediterranean world. With the vast natural resources of the West and the accumulated treasures of the East at her disposal, the city on the Tiber now witnessed a rapid rise in the standard of wealth of her people and a marked change in its distribution. The drift towards the two extremes of riches and poverty led to abject misery at the one end of the social ladder and, at the other end, to the most extravagant luxury which found expression, *inter alia*, in an ever growing demand for foreign, and particularly eastern, products. From the Asiatic provinces, rich not only in cereals but also in fruit-trees and scented plants, a vast export trade to Rome came into being. In the beginning, Italy imported the fruits only of exotic trees; but, with the gradual concentration of the land in the hands of the rich, the acclimatization of the eastern fruit-trees themselves was taken in hand, favoured by the immigration of rapidly increasing numbers of foreign labourers, amongst whom Semitic gardeners are specifically mentioned for their professional skill. Thanks to their presence and to the close connection with Egypt consequent upon political subjugation of that country, there arose in Italy, towards the middle of the second century B.C., a new and highly developed art of gardening which, together with Egyptian styles of furniture and Egyptian decorative art, received renewed encouragement, about a century later, first by the presence in Rome of Cleopatra as Caesar's mistress, and—after the battle of Actium and the fall of the dynasty of the Ptolemies—by the exodus to Rome of the artists, artisans,

gardeners, and traders in articles of luxury, who had until then worked for the Alexandrian Court. This renewed influx of eastern men and fashions again acted as a fresh stimulus on the demand for oriental wines, scents, drugs and fruits; and with the latter, the citron and the citron-tree appear to have found their way to Italy.

It is commonly believed that the earliest reference to the citron in Latin literature occurs, towards the middle of the first century B.C., in the writings of Varro (116-27 B.C.), who mentions *citrus* as an ornament of the country-seat of one Quintus Axius, at Reate.⁶⁰ It is true that, in extolling the attractive simplicity of the traditional Roman villa, Varro causes one of his personages to ask: "*nuncubi hic vides citrum aut aurum? num minium aut armenium? non quod emblema aut lithostratum?*" But it is obvious that *citrus* stands here for "cedar wood," and that, far from referring to "citron trees and their golden crowns," Varro's question only means, if we add the preceding sentence, "is not this villa, which our ancestors built, on a more frugal plan, and better than that elegant one of yours near Reate? Where do you see cedar wood, or gold, or vermilion, or Armenian pigment, or mosaic work, or tessellated pavement here, all of which abound in your villa?"

On the other hand, the fact that practically at the same time Virgil (70-19 B.C.), in speaking of the citron, writes that "Not every land can nourish every tree. . . . The apple Media provides . . ." ⁶¹ is commonly interpreted as proving that citron-trees were not yet grown in Italy in his days. This conclusion is not only unwarranted by Virgil's verse just quoted, which speaks of the fruit only and not of the tree, but the beautifully realistic picture which Virgil himself gives of the citron-tree,

"The tree is huge and features well a bay,
And but that it diffuses perfume strong
Of other kind, a bay it is: its leaves
No breezes move, its flower most closely clings," ⁶²

rather gives the impression that he must have seen the tree in actual growth. That citron-trees were kept growing

⁶⁰ PJ, III, ii, 4 (p. 116).

⁶¹ PS, II, 129 and 150.

⁶² PS, II, 156-159.

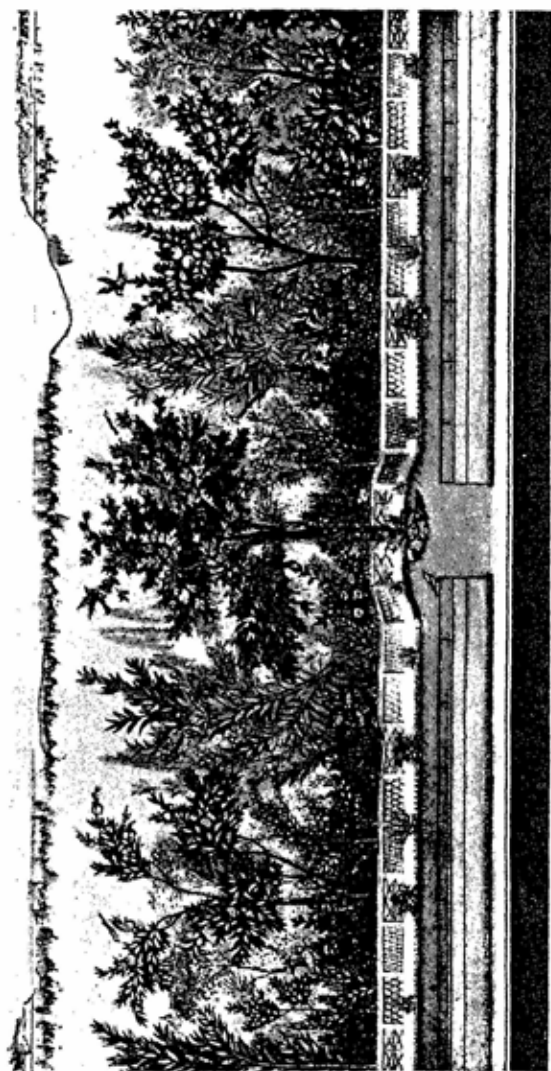
in Italy, but that, whilst they may occasionally have blossomed, they did not bear fruit, seems to be proved by an interesting wall-painting of the time, which is still extant to-day.

In 38 B.C. the Emperor Augustus married Livia Drusilla, the divorced wife of Tiberius Claudius Nero. It was a love-match. "As Livia was returning to her estate near Veii, immediately after her marriage with Augustus, an eagle which flew by dropped into her lap a white hen holding in its beak a sprig of laurel, just as the eagle had carried it off. Livia resolved to rear the fowl and plant the sprig, whereupon such a great brood of chickens was hatched that to this day the villa is called *Ad Gallinas*" ("The Hen-Roost").⁶³ An old house situated on the farm was apparently rebuilt by Augustus; its ruins were rediscovered—the locality is now named *Prima Porta* and is situated about 12 kilometres north of Rome on the *Via Flaminia*—and excavated in 1863, yielding amongst other finds the most celebrated of all statues of Augustus, the one which represents the Emperor addressing his soldiers after victory. A single room is all that is left of the one-time splendour, a basement sunk deep into the earth and of the kind in which the Romans liked to seek refuge from the suffocating heat of summer days in the *Campagna*. The four walls are covered with paintings of which the evident purpose was to conjure down into this subterranean retreat the illusion of the actual gardens from which the heat had driven the august mistress of the house. The paintings form, indeed, one uninterrupted garden scene, and the inner arrangement of the room was no doubt in harmony with it and increased the illusion.⁶⁴ Along the lower part of the wall-decoration runs a low, delicately wrought wooden fence, which separates the room from an imaginary broad green path along the farther edge of which another fence, of a different and more elaborate pattern, runs close to small groups of trees, with ivy creeping up their trunks, and flower beds covering the ground between them, whilst birds of many hues are hovering about their branches. It is obvious that we have here before us one of those masterpieces of Alexandrian landscape decoration which Pliny tells us became

⁶³ OL, VII, 1.

⁶⁴ GU, Vol. I, p. 102.





Wall Painting at the Villa of Livia at Prima Porta (near Rome).
(From Gothein, *Geschichte der Gartenkunst*.)

fashionable in Rome precisely in the time of Augustus, an art of which the master exponent was one Studius, who decorated walls with "villas, harbours, landscape gardens, groves, woods, hills, fish ponds, canals, rivers, shores"⁶⁵ and other equally pleasant sights. The trees are date-palms, cypresses, and various kinds of fruit-trees, amongst which there is one with the carriage and leaves characteristically those of a citron, but with quinces for fruit (Plate XVI). A German botanist, who made the plants represented in these frescoes the subject of a special study, has suggested that the artist, who intended to represent the golden apple-tree of Hesperidean fame, took for his model a citron-tree that was growing in the garden of the villa—but without bearing fruit—and inserted on its branches quinces, which at the time were thought to be the actual apples of the Hesperides;⁶⁶ for, as the same authority points out, and as anyone familiar with the botany of the genus *Citrus* will notice at a glance, certain details of the leaves, in particular the manner and angle of their insertion on the twigs, are such as no artist could have painted unless he had a live tree for his model. Is it not reasonable to suppose that if the citron-trees in Livia's garden had been bearing their own fruit, the artist, in keeping with the naturalistic tendencies of the Alexandrian school, would have painted the citrons as he saw them instead of having recourse, in order to complete the picture, to a symbolical rendering of the fruit of the Hesperides? I therefore think that the frescoes of Livia's villa *Ad Gallinas* may be taken as a proof that in the course of the first century B.C. the Romans had succeeded in making the citron-tree grow in their country, but that they had not yet learned the art of compelling it to bear fruit.

Yet, within half a century or so, this difficulty seems to have been overcome, and the citron-tree ceased to be a very exceptional feature of the Roman garden; at the same time the fruit, which up to then had been appreciated only for its medicinal virtues, was just beginning to appear on the tables of a few exclusive amateurs. Pliny (about A.D. 70) writes that "this tree is used to beautify the houses . . . it bears a fruit of which the smell and the bitterness are hateful to many people."⁶⁷ He tells us that "the citron-

⁶⁵ MC, XXXV, cxvi.⁶⁶ KR, p. 79.⁶⁷ MC, XIII, xxxi.

tree is propagated either from seeds or from cuttings";⁶⁸ and, as if in order to dispel all possible doubt on our part as to whether what he intends to say about the citron-tree actually applies to conditions obtaining at the time in Italy, the first mention at all which he makes of this tree starts with the following words: "In regard to fruit trees, I shall speak of those which have already begun to become naturalised with us."⁶⁹ At about the same time as Pliny was engaged in writing his *Natural History*, possibly even a little earlier, Petronius published his celebrated, licentious and romantic satire called "*The Satyricon*," in which he depicts the mad luxury and deep-seated moral corruption of some of the Roman *nouveaux riches* in the days of Nero. In the best known chapter of his book he describes a banquet at the house of Trimalchio, a typical parvenu, who, not content like other people to purchase what he needs, prides himself on producing on his own numerous estates everything that he requires for his household: "he produces everything himself: his wool, his citrons, his pepper."⁷⁰

Once again, contemporary Roman works of art confirm the statements of the Latin writers. The Roman relief reproduced on Plate XVII, a fragment from the monumental tomb of the wealthy Roman family of the Haterii on the Via Labicana, and which dates from the last few years of the Flavian dynasty (c. A.D. 90), shows quinces and citrons, both of them together with leaves, and still attached to their respective branches. In the Museo Nazionale at Naples, there are to be found a series of wall-paintings from Pompei representing eight dancing maidens, whose exquisite gracefulness remains unsurpassed by that of any other contemporary Roman picture known to us. One of these dancing figures (Plate XVIII) carries in her left hand a kind of sceptre, and in her right, a branch with leaves and flowers. The picture, unfortunately, has been so severely damaged by moisture or other climatic influences, that it is hardly possible at present to recognize with certainty the exact outline and colours of the leaves and the flowers, whilst the end of the branch has altogether disappeared; yet, the general impression is clearly that of a freshly cut branch of a citron-tree. It was in the year

⁶⁸ MC, XVII, xi.⁶⁹ MC, XII, vii, 1.⁷⁰ LY, XXXVIII.



Marble Slab from the Tomb of the Haterii.

Photo : Anderson]

(Lateran Museum, Rome.)



Dancing Maiden: Wall Painting from Pompei.

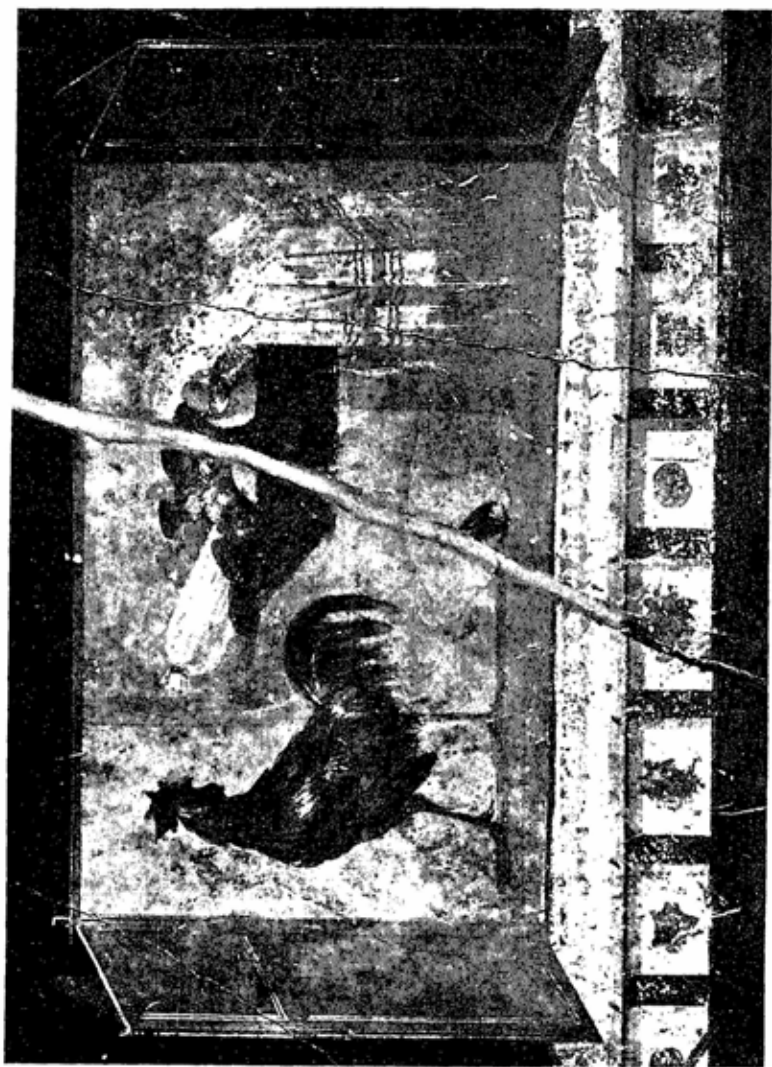
Photo : Giacomo Brogi]

(Museo Nazionale, Naples.)



Dancing Maiden from Pompei. Spanish Tapestry (late Eighteenth Century)
at the Escorial.

Photo : Hnos. Quesada]



Wall Painting at the Casa del Criptoportico, in Pompeii.
Photo: R. Soprintendenza alle Antichità della Campania]

1748 that the excavation of Pompeii and Herculaneum—the Roman pleasure resorts buried under the ashes of Vesuvius in the course of that volcano's eruption of A.D. 79—was first taken in hand by order of Charles III, king of Naples and Sicily, and the son of Philip V of Spain. In 1749, the excavators found in one of the buried houses, which has since been named "the villa of Cicero," the eight charming pictures of dancing maidens now in the Naples Museum. In 1757 the results of these first excavations were published in a work entitled *Pitture di Ercolano e Contorni*; amongst the pictures reproduced there in outline we find precisely our dancing maiden with the sceptre and the flowered branch, and on this illustration, drawn by an artist who evidently had in front of him the painting still fresh and undamaged, one recognizes without any possibility of doubt citron leaves and blossoms, as well as a citron-fruit itself still attached to the end of its branch.⁷¹ But there is evidence still more convincing. In 1759, Charles III, having succeeded to the Spanish crown, abdicated the throne of Naples and Sicily in favour of his son Ferdinand, and returned to Spain. In 1772 he ordered the famous Spanish architect Villanueva to build, in the gardens of the Escorial near Madrid, a miniature palace for the young prince Charles, the heir to the throne. The building, which is until this day known as *La Casita del Principe*, with its tiny rooms and lilliputian furniture, was profusely decorated in what was then called the Pompeian style, dear to the king himself. The walls are hung with tapestries woven in the royal Spanish workshops of Santa Barbara at Madrid, most of them having been specially ordered for this "Little House of the Prince." In the principal drawing-room, known as the "Salon Pompeyano," two of the tapestries are nothing else but greatly enlarged copies of two of the pictures of dancing girls unearthed at Pompeii in 1749, and one of the two happens to be the girl with the citron branch. But in the present case the reproduction is in the colours of the original and at the same time on a greatly enlarged scale, and it is easy to identify the leaves and the flowers as being those of the citron-tree (Plate XIX).

The renewed excavations carried out in Pompei during

⁷¹ FP, Vol. I, Plate XXIVa.

the last few years have, *inter alia*, brought to light, in the triclinium of the house known as the *Casa del Criptoportico*, a fairly well preserved wall-painting (Plate XX) of a basket full of various fruits—one of them a beautiful citron—partly covered with what appears to be a Jewish prayer shawl (*tallith*);⁷² I venture to suggest that this picture represents a basket of "first-fruits" such as were carried to the Temple on the Feast of Weeks (Pentecost).

The conclusion is clear: the sculptured panel (Plate XVII) from the tomb of the Haterii near Rome, as well as the wall-paintings of Pompei, confirm the statements of Pliny and Petronius to the effect that by the middle of the first century A.D. the citron-tree was already naturalized in certain parts of Italy, and that it was no longer only just vegetating there as in the time of Augustus, but was producing flowers and fruit.

It has never been satisfactorily established what the dancing maidens of the Pompei wall-paintings were really meant to represent. In catalogues and books they are usually described as bacchantes; yet, if one looks at the quiet, almost religiously measured movements of these girls, the calm expression of their faces, the chaste attitude of their bodies in most cases veiled by long and ample robes, and compares all these with the intense rhythm of the maenads in Greek or Hellenistic representations of Bacchanals (Plate XXI), their dishevelled hair, the passionate appeal of their naked bodies, one is forced to the conclusion that the dancing maidens from Pompei cannot be meant to represent the frenzied devotees of Bacchus. The contrast between the two types of women and their attitudes is exactly that which the Maccabean reformers seem to have aimed at when substituting the citron for the cedar cone; maybe that the so-called "bacchantes" of Pompei are no more than Jewish or Judaising Roman girls taking part in the rejoicings connected with the Feast of Tabernacles and with that of Weeks (Plate XXII).

The spread of the culture of the citron-tree must have been stimulated by the growing demand for citrons as a fruit to be eaten, and by the high prices which the wealthier people were no doubt prepared to pay for it. Before the

⁷² So far, the oldest known representations of the *tallith* do not seem to go back beyond the thirteenth century A.D.

end of the century, Plutarch, the famous biographer and philosopher who was lecturing at Rome during the reign of Domitian (A.D. 81-96), could write that "many substances which in the past people would neither taste nor eat, are considered to-day as very agreeable . . . Shall we mention the cucumber, the melon, the Median apple, and pepper? We know a number of old people who to this day cannot bring themselves to taste of them."⁷³ It is a pity that Plutarch does not tell us how people used to eat the citron in his days, whether *au naturel*, or preserved in honey as the Romans liked to do with other fruits. Neither do we know how the tree was grown. Was the propagation effected under glass, that is to say was the citron one of the plants in connection with which Seneca had, as early as the latter half of the first century B.C., written in his ninetieth epistle that in his time panes of mica had come into use, not only for windows but also as a means of protecting against cold the more delicate amongst the plants then grown in Roman gardens?⁷⁴ Whilst the poet Martial,⁷⁵ a contemporary of Plutarch, in one of his epigrams taunts a friend for being kinder to his flowers and young trees than to the writer, seeing that he keeps the former under mica which protects them against the wind and cold air and yet permits the warm and pure rays of the sun to reach them; wherefore—says the poet—in future he would be a guest of these trees rather than of such a cruel friend.

I have already referred to some of the information furnished by Florentinus, although it is not quite sure whether the particulars which he gives are not meant by him to apply only to Greece; but even so, since in his days Greek culture, both in its spiritual and material aspects, had long ago been implanted into Italy, it may reasonably be assumed that his words are true for the latter country as well. He reports that "some of the rich and luxurious plant their citrons against walls in houses facing the sun, and give them plenty of water, and in summer they leave these houses uncovered, thus affording the plants the benefits of the sun, but when the winter comes they cover the trees." He gives his readers detailed instructions as to methods of grafting, and tells them how

⁷³ MD, VIII, ix, 3.⁷⁴ BJ, p. 19b.⁷⁵ KD, VIII, xiv.

to proceed in order to obtain fruit of different colours, or of various shapes: "When the fruit of the citron is set in an earthen or glass vessel before it has grown to its full size, it will in growing further be formed according to the vessel, and it will develop in proportion to the size of the latter, for the fruit seems to have a tendency towards this; but it is necessary to afford the vessel vent-holes." And in order to obtain citrons of a big size, he recommends "when the crop of fruit is heavy, . . . to gather a great part of it, and to leave few, for thus they are better nourished."⁷⁶ But, if it is clear that the citron was already thoroughly naturalized in Italy during the first and second century A.D., its culture cannot as yet have been practised on a very large scale, as otherwise it would be difficult to account for the high prices which were still being paid for citrons in 301, the year in which the Emperor Diocletian—in order to meet the distress caused, especially amongst the soldiers, by several bad harvests and by commercial speculations—promulgated his edict *De pretiis rerum venalium*, in which he fixed maximum prices for provisions and other articles of commerce, as well as a maximum rate of wages. The edict gives the relative values, at the time, of cereals, vegetables, fruits, wine, oil, meat, skins, leather, furs, footgear, timber, carpets, articles of dress, and it fixes the range of wages from the ordinary labourer to the professional advocate. The unit of money was the copper *denarius* introduced by Diocletian, the value of which has been fixed approximately at one-fifth of a penny; the punishment for exceeding the prices fixed was death or deportation. Amongst the fruits listed, there appears also the citron, the maximum price for which is fixed at from 16 to 24 *denarii*, that is the equivalent of from 3d. to 5d.; that this was a lot of money is clear if one considers that the maximum price of a melon was fixed at from 1 to 2 *denarii* only.⁷⁷ But Roman *gourmets* were perhaps quite satisfied to pay even a comparatively high price for a fruit which—as Gargilius Martialis wrote in his *Medicinae ex oleribus et pomis*, i.e., Medicines from vegetables and fruits—if eaten in moderate quantities, or if added to hot drinks, is helpful to digestion.⁷⁸

⁷⁶ GL, X, vii.⁷⁷ LU, art. "Citrone."⁷⁸ GG, Ch. XLV, *De citrio*.



Bacchus Preceded by a Faun and a Bacchant (from Herculaneum)
(Museo Nazionale, Naples.)
Photo : G. Brogi]

PLATE XXII



Dancing Maiden from Pompei.

Photo : G. Brogi]

(Museo Nazionale, Naples.)

That in the course of the third and the first half of the fourth century remarkable progress was achieved by Italian horticulturists in their methods of growing the citron, becomes obvious as soon as one compares the passages just quoted from Florentinus with the almost scientific rules laid down by Palladius (Rutilius Taurus Aemilianus), an eminent agronomist of the second half of the fourth century. He tells his readers in detail how to proceed in order to establish a citron nursery from seeds, cuttings, or layers, and insists on the importance of carefully destroying all weeds, and on the value of wood-ashes as a fertilizer for young trees; he recommends irrigating the seeds with tepid water as a means of hastening germination. He goes into details as to the best time for transplanting the young trees from the nursery into the grove, the technique of such transplantation, the most favourable distance to be observed between the trees in the grove; he lays down the rules by which the planter ought to be guided in the choice of a suitable site for his citron grove, with due regard to the nature of the soil as well as to the location in relation to sun and wind; he recommends the growing of cover crops to be turned under as green manure. Like Florentinus before him, he devotes much attention to the question of how best to protect the trees against the cold of winter, and in addition to the various methods described by his Greek predecessor he recommends wrapping up the trees in coarse straw: "I have planted some of them in very cold climates during the months of July and August, and by watering them daily I was enabled to see them grow and bear fruit in a perfect manner." He knows the importance of keeping the soil around the roots well stirred: "This tree demands that the soil around its foot be often stirred, it then produces fruit of bigger size"; and, in a very short sentence he sums up, in a manner that could hardly be improved upon to-day, the essential principles by which one ought to be guided in pruning citron-trees: "one does not prune it except on very rare occasions, and then only with the object of removing twigs that have become dry." We are also told, not without an occasional lapse into superstition, how to proceed in order to keep citrons in good condition for many months: "One can keep citrons on the trees nearly a whole year; it is better however to shut them up in some vessel

or other. If one intends to keep them, they ought to be picked during a moonless night (!), together with their twigs still covered with leaves, and they should be stored away each one separately. Some people shut them up each one in a vessel by itself, others cover the fruit with plaster and put it away in a dark place. Most people keep their citrons in cedar sawdust, or in straw." The methods advocated by Palladius for cultivating the citron-tree had been practised by himself with complete success: "In Sardinia and on the lands which I own near Naples, where the sun and the climate are warm and water abundant, the citron-tree is never without fruits. The crops there follow one another without interruption, as if by degrees, so that the green fruits follow the ripe ones, whilst these in turn are replaced by blossoms, thanks to Nature which seems to be moving in cycles of never-ending fruitfulness."⁷⁹

⁷⁹ LQ, IX, x.

CHAPTER IV.

ROMAN TRADE WITH INDIA AND THE FIRST APPEARANCE OF
ORANGES AND LEMONS IN THE MEDITERRANEAN WORLD.

FOR the last three thousand years at least, the political life of the peoples of Western Asia, of Europe and of the valley of the Nile has been dominated by one obsession: to get closer and ever closer to the source of the silk, the gold, the precious stones, the spices, and the scents, which reached them through middlemen of many different nations along the immemorial trading routes that led from China and India to the Mediterranean and the Black Sea. The carriers who transported these goods, the governments through whose territories the routes passed, the merchants in the Mediterranean ports where the various roads terminated, were making enormous profits out of their connection with this trade. It was with the object of acquiring a share in these profits that Jason led the Argonauts to Colchis on the eastern shore of the Black Sea, as the Greek legend puts it, "to bring back the Golden Fleece"; to keep open the passage through the Bosphorus—the present Dardanelles—to the Black Sea and the Armenian branch of the great Transasiatic trunk road, the Dorian Greeks waged their war of destruction on Troy, using as a pretext the abduction of the Queen of Sparta by the Trojan prince Paris; it was the same *Drang nach Osten* that caused the rulers of ancient Egypt to send expeditions to the "sacred land of Punt," and Solomon, King of the Hebrews, in partnership with the Phoenician Hiram, to send a fleet of Tarshish ships down the Red Sea to Ophir. The Persians, from Cyrus to Xerxes, were the first to secure control of the whole of the route, from the Punjab and the Oxus in the East, to the Black Sea, the Aegean, and Egypt in the West; and Alexander the Great, on wresting this control from them, added to it the mastery over the maritime routes from the ports of Armenia, Asia Minor, Syria, Palestine, and Egypt, to

Europe. The division of Alexander's empire between his generals left the Seleucids in control of the land routes from India to the peninsula of Sinai; whereupon the Ptolemies in Egypt associated themselves with the sailors and merchants of southern Arabia for the creation and development of a permanent direct connection with India by sea, and their success in this direction enabled them to turn their chief port Alexandria, as the principal supplier of Rome with eastern luxuries, into the most important commercial and industrial centre of the age. After the battle of Actium, the Romans under Augustus, prevented by the Parthians from advancing further east than Armenia, yet impatient to gain their share in the profits of the trade with India, found themselves compelled, exactly like the Ptolemies a few centuries before, to fall back on the maritime route via the Red Sea and the Indian Ocean: Egypt, the one-time ally, was made a Roman province, whilst a close alliance with Herod, the Idumean king of Judea, gave Rome the *de facto* control of the "spice road" which connected the Palestinian coast at Gaza¹ with the Jewish port of Akabah on the Red Sea, by way of Petra in Edom.

The immediate result of these measures was a tremendous increase in Roman imports from India via the Arabian ports and through the agency of Arabian intermediaries. Augustus himself did everything to promote this trade. Amongst other measures, he sent to Arabia a military expedition which established there stations for the collection of taxes on all goods passing through the Red Sea in transit.

On the return of this military expedition, the Romans learned for the first time that most of the goods brought into the Egyptian or the Jewish Red Sea ports by Arab vessels did not come from Arabia itself but from India. The Romans, however, continued to believe that the only route by which Southern India could be reached from the Red Sea lay, first along the south-east coast of Arabia, then across the Gulf of Oman and along the coast of present-day Baluchistan and Sind, and then only southward along the western coast of the Indian peninsula; and the length and difficulties of this voyage were such that they did not

¹ MC, XII, xxxii.

feel tempted to endeavour to cut the Arab merchants out and to take the Indian trade into their own hands. The Arabs, of course, did not follow this round-about route. They knew, and took advantage of, the periodicity of the monsoon in order to sail in a straight line from the Straits of Bab el-Mandeb, at the southern end of the Red Sea, to the west coast of the Indian peninsula and back ; but they kept their secret well, and it was not until by mere accident a Roman discovered this direct route to India that Roman citizens began to supplant the Arabs. During the reign of the emperor Claudius (41-54), one Annius Plocanus had farmed the custom dues of the Red Sea from the Roman fiscus and had sent one of his freedmen, Hippalus by name, to collect them. On one occasion, the latter, whilst at sea, was caught by a storm and driven from the Arabian coast in a straight line across the Indian Ocean to Ceylon, where the people received him in the most friendly way and six months later sent him back by the same route.² At once the Roman Government took systematic measures designed to oust the Arab merchants and to secure the monopoly of the Indian trade for ships from Egyptian ports. Roman naval stations were established in the Red Sea for the suppression of piracy and for the provision of military escorts for the trading vessels,³ and a fleet was sent against Adana, the present Aden—the chief trading centre of the Arabian coast—which was completely destroyed. At the same time a protective customs tariff was put in force which, by the imposition of a heavy duty of 25 per cent. of the value of the goods shipped from Arabian ports, set up a powerful privilege in favour of direct Indian trade.⁴ Alexandria now became the principal centre of the traffic between Rome and India ; and of the Arabian ports, which rapidly lost their importance, some, like Adana and perhaps the Island of Socotra, were occupied by the Romans and turned into watering stations and places of refuge for the sailors.⁵ A few years only after the discovery of the periodicity of the monsoon by Hippalus, one Arrianos, apparently a Greek merchant from Alexandria,⁶ wrote under the title of "Periplus of the Erythrean Sea" a kind of survey in which he described, from personal observation

² MC, VI, lxxxiv.³ MC, VI, xxvi.⁴ KQ, p. 33.⁵ NC, p. 93.⁶ KN, II, p. 81.

and from the two-fold point of view of the sailor and the merchant, the bays, capes, harbours, roadsteads, markets, as well as the imports and exports, of the east coast of Africa as far south as Zanzibar, of both the African and the Arabian shores of the Red Sea, of the south-east coast of Arabia, and of the coast of Persia and India as far south as present-day Cochin and Travancore; and from his account it appears that in his time the new direct route to India inaugurated by Hippalus had already become fully established.⁷ The natural consequence of this development was a new and marked increase in the volume of Roman imports from India to Italy, and this in turn led to a pressing and constantly growing demand for bigger ships and for larger financial means than those owned by the merchants themselves; as a result, increasing numbers of wealthy Romans took to playing the part of bankers in the financing of commercial enterprise with India, either through investing capital in the building of new and better ships or through providing trading credits. The Romans did not, however, engage in the actual carrying on of the trade, which was and remained in the hands of Greek, Syrian, and Jewish⁸ subjects of the Empire, many of whom resided for years at a time in India;⁹ others, their fortunes made, settled in Italy, and particularly in Pompeii, Herculaneum, and Tusculum, where, like the wealthy native Romans, they built themselves beautiful houses lavishly decorated in the fashionable Alexandrian style.

It was during the period extending from the middle of the first century A.D. to the middle of the second that Roman trade with India was most active. The reign of Marcus Aurelius (161-180), which marks the turning point in the general well-being of the Roman world, saw also the beginning of a rapid decline in Roman commerce with the more distant Eastern countries, and by the beginning of the third century direct sea-trade between the Roman Empire and India had practically ceased to exist,

⁷ NC, p. 93.

⁸ A colony of Jews is said to have taken refuge at Muziris, the principal port on the Malabar coast, after the destruction of Jerusalem by the Romans in A.D. 70; it was from Muziris that the Romans imported most of the beryls and pearls for which they paid such high prices.

⁹ PZ, pp. 68 and 78.

the Arabs once more having gained control of such traffic as still went on.

The number of Roman coins of the early emperors, which have been found in different places in India, show that Roman trade was chiefly concentrated in the southern parts of the peninsula, where the pearls and spices were obtained ; but those were also the regions where, as we have seen before, the orange-trees had recently become naturalized. Of course, the length of the journey—40 days or so from the Malabar coast across the Indian Ocean to Ocelis near Aden on the Straits of Bab el-Mandeb, 30 days' sailing from Ocelis to the Egyptian Red Sea port of Berenice due east of Assuan, 12 days by camel from Berenice across the desert to Coptos (Keft) on the Nile, and another 12 days' sailing down that river to Alexandria,¹⁰ that is, altogether about three months from India to Alexandria only, to which must still be added the sea-voyage from Alexandria to Italy—offered insuperable obstacles to the importation of citrus fruits or trees directly from India. But the first stage alone of the journey, that is the 40 days' sailing from southern Hindustan to Arabia, held no such difficulties ; on the contrary, seeing that in order to have the full advantage of the east monsoon one had to set sail from India either in December or in January,¹¹ which was just the time when oranges and lemons were ripe, it would have been more than strange if, for some time already before the Romans penetrated to the Red Sea, Arab sailors had not been carrying Indian oranges, lemons, or limes with them on their homeward voyages and had not attempted to propagate the trees, even if from seeds only, in their own country. With the expansion of commercial relations and the improvement of communications, especially after the establishment of the *Pax Romana* in the Red Sea and along the trade routes from Akabah to Gaza and from Berenice to the Nile, the fruit as well as the trees must have reached the citrus groves of Palestine and Lower Egypt, whence shipment to Italy became a comparatively simple matter. That this opportunity was not missed by the *gourmets* of Rome may be taken for granted. Did they not pay fantastic sums of money for other exotic delicacies such as pickled fish in

¹⁰ MC, VI, xxvi.

¹¹ MC, VI, xxvi.

jars from Pontus¹²—possibly some sort of caviare—or for cloves, pepper, and sugar from India?¹³ Did they not—so great was their desire to obtain in the freshest possible state some of the rarer Indian dainties—occasionally send special couriers to that country for the purpose?¹⁴

Gallesio¹⁵ and, following him, de Candolle,¹⁶ Hehn,¹⁷ and all other modern writers without exception¹⁸ hold that the orange and the lemon were unknown to any of the Mediterranean nations until the tenth century A.D. when Arabs are supposed to have brought the first trees from India. Yet, in spite of their unanimity—which in most instances is no more than mere repetition of Gallesio's arguments, quietly accepted on account of the writers' inability to wend their way through the intricacies of ancient citrus terminology—all these authorities are mistaken.

A mosaic floor, from a second century Roman villa at Carthage (reproduced in Plate XXIII) shows branches from citron and lemon trees, the latter with fruit of the almost spherical variety depicted some 1,500 years later by the Spanish painter Luis de Menendez (Plate XXIV). If lemons and oranges were imported into Italy during the high tide of Roman trade with the Red Sea and India, that is, soon after the middle of the first century A.D., where else ought we more likely to find traces of these fruits than in pleasure-loving, sensual, dissipated Pompei? In fact, the *Museo Nazionale* at Naples contains two frescoes from Pompei, on which ripe lemons are depicted; one of them bears the catalogue No. 8525, the other, which does not appear to be numbered, is reproduced in Plate XXV. It represents one of those garlands of flowers and fruits which the Alexandrian painters used so profusely in the decoration of Italian houses during the Empire; the three fruits immediately to the left of the little Eros are, by their shape and their characteristic citrine colour, recognizable at once as lemons. Plate XXVI, a reproduction of a mosaic, also from

¹² CK, VI, cix. MG, XXXI, xxiv.

¹⁴ LY, XXXVIII.

¹⁶ DV, pp. 146, 148, 149.

¹⁸ MQ, pp. 236, 245, 253. AK, p. 10. AG, pp. 40-41. QB, p. 319. JT, vol. III, p. 296. AB, p. 2. OU, p. 158. AQ, pp. 49 and 122. See also OZ, p. 3.

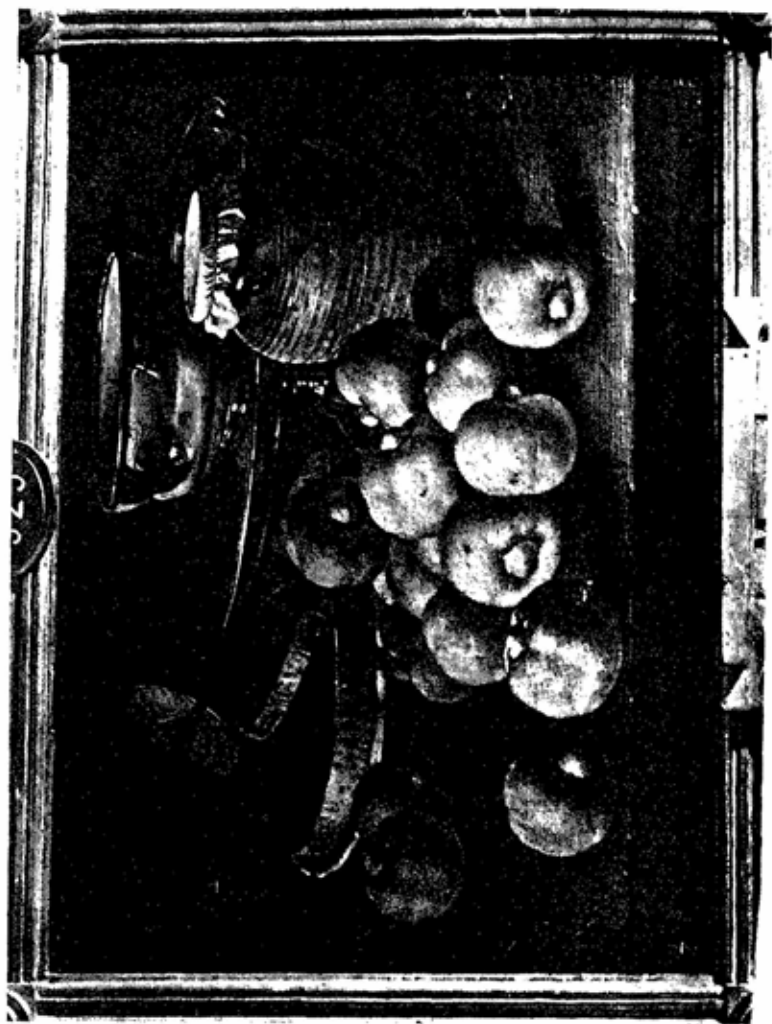
¹³ MC, XII, xiv, xv, xvii.

¹⁵ AL, pp. 239, 243, 293.

¹⁷ HD, pp. 445 and 452.



Mosaic Pavement of the Roman Villa called "La Voliere" at Carthage (Probably Second Century A.D.). Branch with Two Citrons in Lower Centre; Branch with Five Lemons in Upper Right Corner.



Luis de Menéndez (1716-1780): Still Life.

(Prado, Madrid, No. 925.)

Pompei, in the same museum, shows three parrots perched on the edge of a bowl half full of water. The bowl stands on a square pediment with a crouching leopard beside it, whilst the lower corner to the left of the picture is occupied by a remarkably faithful representation of an orange affected with a type of excrescence with which every orange-grower is familiar; Ferrarius, writing in the seventeenth century, has depicted it under the name of "*Aurantium callosum*" (Plate XXVII). The Roman artist—see Plate XXVIII, where the fruit is represented in the size and colours of the original mosaic—tried to represent the orange as if it had only just been broken off the tree together with its stem to which the leaves as well as a flower bud are still attached. Yet, if the leaves are true orange leaves and are well drawn and their colours perfectly imitated, the unnatural position of the stem in relation to the fruit clearly betrays the fact that the latter is not really attached to but has merely been placed on the thin end of the stem. On the other hand, the big and purple-coloured bud is that of a citron-tree: the bud of an orange-tree would be much smaller, and perfectly white. This little picture teaches us more than whole pages of written matter could have done. Oranges, probably of a sweet variety—for the leaf-stalk in the picture is not winged—were known in Italy before Pompei was destroyed, that is about A.D. 70; the orange-tree was grown there, but did neither blossom nor, consequently, bear fruit; the painter who drew the picture for the mosaic worker could not imagine that in what to all intents and purposes must have appeared to him—and was, in fact, regarded by his contemporaries¹⁹—as just a red variety of citron, the buds would be of a different colour to that of the ordinary citron-tree cultivated in the country. The people of Pompei knew, furthermore, that the real country of origin of the red fruit was India, a fact to which the artist gave expression by introducing into his picture parrots and a leopard, both of which were imported from India to Italy—the former in large numbers²⁰—and were looked upon by the Romans and the Hellenistic Greeks as animals symbolical of India; witness, for example, the first or second century

¹⁹ Compare "red lemons," p. 124.

²⁰ MC, X, xxviii. LV, II, xxviii, 1. PZ, p. 8'

silver dish found on the site of the Ionian city of Lamp-sacos near Gallipoli, on which India is artistically represented in the shape of a woman surrounded by a leopard, a tiger, a parrot, and a hanuman monkey.²¹ It is, by the way, an interesting coincidence—unless this detail was already known in Pompei—that parrots are particularly fond of oranges.²² That, soon after, not only oranges and lemons, but possibly also limes may have been known in Roman Italy is suggested by another mosaic (No. 58596 of the *Museo Nazionale delle Terme Diocleziane* in Rome), reproduced in colours on Plate I serving as frontispiece to this volume. It represents a basket containing an ordinary apple (first on the left) together with a collection of what appear to have been all the varieties of citrus fruits then obtainable in Italy, namely, from left to right: a lemon, an orange, a citron, another orange (possibly one was meant to be a sour, and the other a sweet one), and a lime; the fruits are neatly arranged on a layer of leaves whose colours and acute ends point rather to orange than to lemon leaves: maybe, another confirmation of the fact that orange trees were cultivated in Italy. The birds which surround the basket are an ordinary cock (left bottom of the picture), an *Alectoris barbara barbara* of Northern Africa (right bottom), and a *Numida vulturina* (right top), a guinea fowl from Zanzibar,²³ that is to say, from a country situated, like India, beyond the Red Sea. Nothing certain is known about the story of this mosaic, except that it came to the National Museum in Rome, in 1870, from the so-called Kircher Museum at the Collegio Romano of the Jesuits. At the time of transfer, no catalogue or inventory was found; yet it is known that most of the mosaics in the Kircher Museum had originally come from a Roman villa situated near ancient Tusculum (the modern Frascati) in a property belonging to the Jesuits and called La Rufinella. The villa was excavated in 1740, and in course of these excavations it is believed that not only our mosaic with the basket of citrus fruits was unearthed, but also a complete series of other mosaic pictures representing

²¹ PZ, p. 143.

²² AD, p. 267.

²³ I am indebted for the determination of the birds in question to Mr. I. Aharoni, lecturer in Zoology at the Jerusalem Hebrew University.

Bacchus (Dionysos) making war upon the Indians, which are now also kept in the *Museo delle Terme* in a room adjoining that where our mosaic of Plate I is to be seen. The Greek legend of the triumphal expedition of Dionysos to India is of post-Alexandrian origin, and is closely connected with the Indian campaign of Alexander the Great, whom the legend idealizes in the guise of Dionysos as the carrier of Hellenic culture to the Barbarians of the distant East. It seems obvious that there must have been some close personal connection between the owner of the Tusculan villa and the countries beyond the Red Sea. One is tempted to imagine him as a retired Greek India-merchant, who, having made his fortune by trading in Eastern delicacies and other luxuries, built himself, in keeping with the fashion of the day, a luxurious villa in the most exclusive of Roman summer resorts, yet that, in an endeavour to idealize—in this city over which the spirit of Cicero still hovered—the utilitarian and mercantile character of his Eastern journeys, he had the floors of his rooms decorated with pictorial representations of the legend commemorating the Indian triumphs of his great compatriot, the culture-bearer Alexander.

An unidentified and undated commentator of the works of Nicander of Colophon—a Greek poet, physician and grammarian of the second century B.C.—wrote the following curious comment on verse 533 of that author's *Alexipharmaca*: "*melon* (apple), that is the *medikon melon* (Median apple), that is to say, the *nerantzion*."²⁴ *Nerantzion* was the Byzantine, and is to this day the Greek name for the sour orange. It is a pity that it has not been found possible to determine even approximately the period at which this note was written, for it might have furnished a most valuable written confirmation of the early introduction of the orange into Europe. It is true that all known scholiasts of Nicander belong to an age previous to the third century A.D.; but there is nothing to prove that the note in question was the work of one of them, for it may have been added by a later editor. Yet, where the written word fails us, the picture provides an unambiguous answer to our questions. The frescoes and mosaics of first century

²⁴ LE, p. 106 of the second part of the volume, containing the *scholia*.

Italy which have been described in the preceding pages show conclusively that oranges and lemons were known in that country, at least, from the time of the Flavian emperors onwards; and that, in addition to the citron-tree, at least the orange-tree was cultivated there, but bore neither fruit nor even flowers; also, that oranges, lemons, and limes were considered as of Indian origin. I shall now endeavour to show that additional arguments in support of these conclusions are to be derived from a critical examination of a number of references in Latin, Greek, and Hebrew literature, which hitherto were believed to apply only to the citron.

Gallesio was the first modern writer to point out that when the lemon was first introduced—as he thought, during the Middle Ages—into Southern Europe, it was apparently looked upon as a variety of the citron and called by the generic name of *citrus*: “Indeed we meet it in the writings of the botanists under the name of *citrus limon* (lemon-citron), or of *mala limonia* (lemon-apple), and sometimes under that of *citrus medica* (Median citron), a name given indiscriminately, now to the lemon-tree, now to the citron-tree, now to the orange-tree, and very often to the whole genus.”²⁵ Jewish and Arab medical writers of the Middle Ages occasionally call the lemon a citron (*turunj*)²⁶; Mattioli, an Italian botanist of the sixteenth century, calls oranges *citroni* as well as *arangi*,²⁷ whilst he uses the term *cedro* as the Italian generic name;²⁸ in the Latin writings of Giorgio Mirlani called Merula²⁹—a fifteenth century Italian humanist and classical scholar—and of Judocus Hondius³⁰—a Dutch geographer of the early seventeenth century—oranges are termed *medici*, that is, citrons. In Barnabe Googe’s English translation of the “Four Books of Husbandry” of the German, Conradus Heresbachius, published in London in 1577, we find the following in a paragraph headed “Cytrons”: “The Cytron, called also the Median, the Persian and the Assyrian Apple . . . such of them as are yellowe, and of a golden colour, they commonly call Oranges: such as are of a greenishe pale yellowe, they call Cytrols or Cytruls:

²⁵ AL, p. 258.

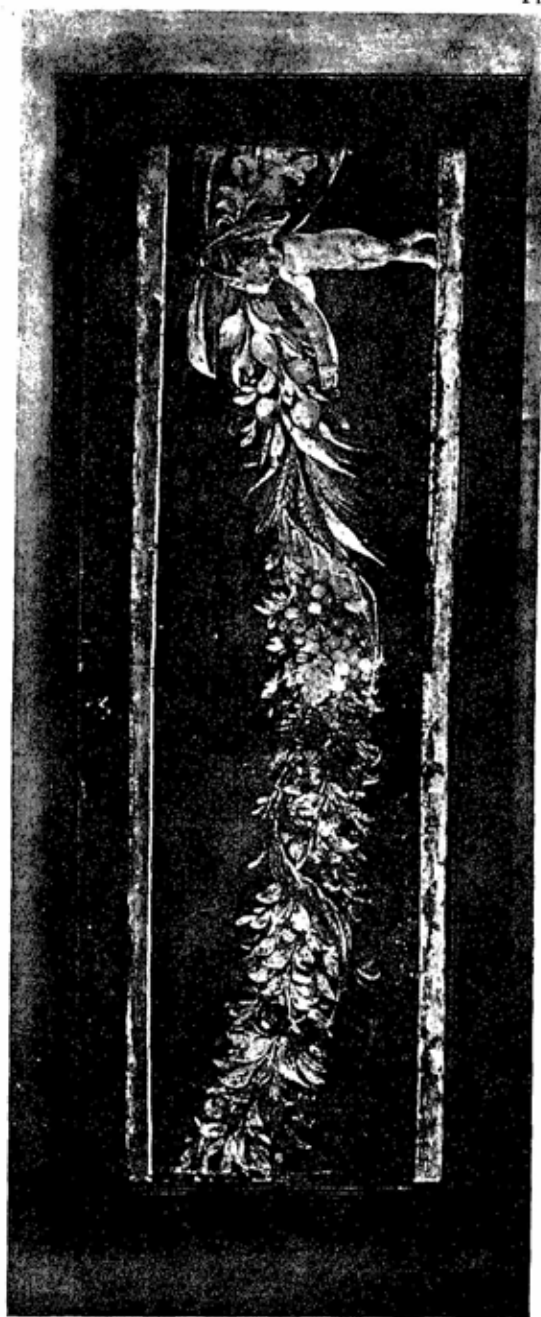
²⁷ AL, p. 124.

²⁹ KK, II, v (p. 696).

²⁶ JT, III, p. 313.

²⁸ AL, p. 15, footnote 1.

³⁰ HN, p. 73.



Wall Painting from Pompei.

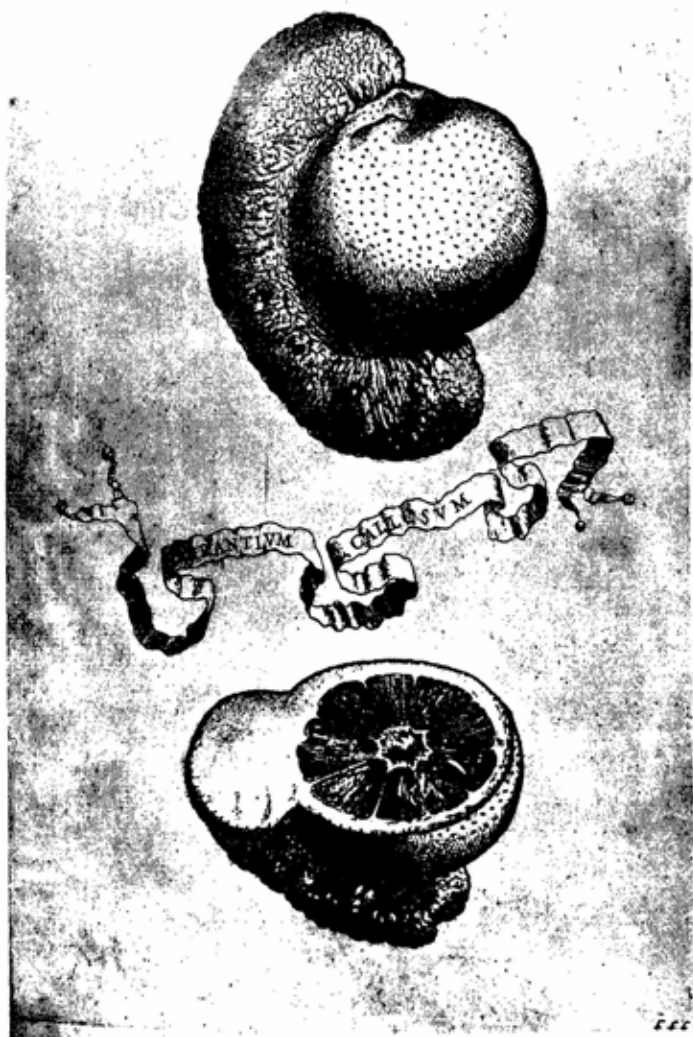
(Museo Nazionale, Naples.)



Mosaic from Pompeii.

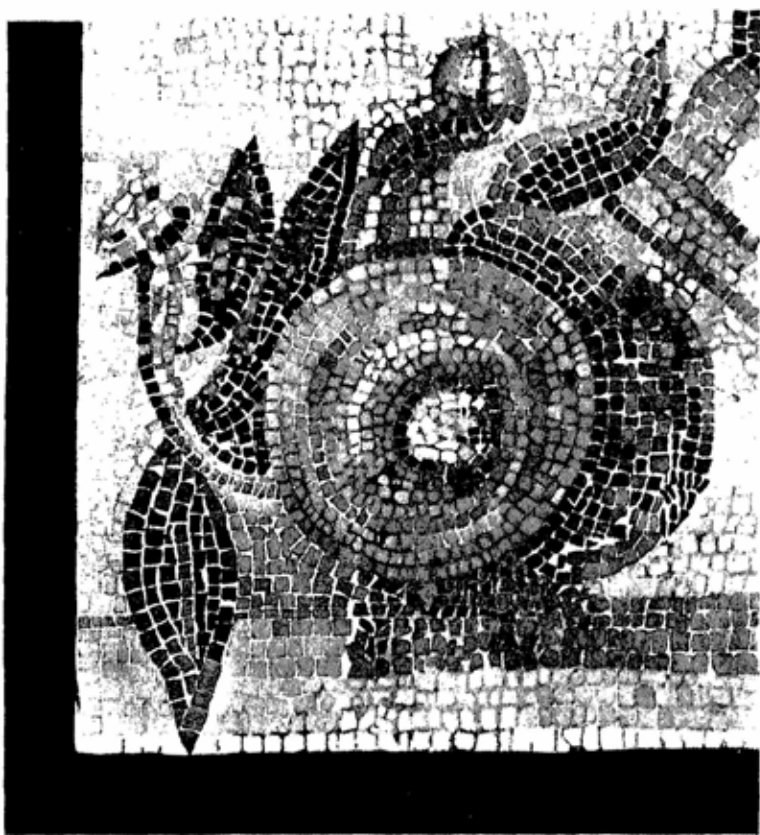
Photo : Brogi]

(Museo Nazionale, Naples [No. 9992].)



Aurantium Callosum.

(From Ferrarius' *Hesperides*, 1646.)



Amalia De Lellis

Mosaic from Pompei.
(Detail of Pl. XXVI.)

those that are long, fashioned like an Egge, yf they be yellowe, are called Cytrons, yf they be greene, Lymons: yf they be very great and round lyke Pomeons, they call them Pomecydrons. . . ."³¹ If in Ambyona (*Moluccas*) the natives call the orange "Chinese lemon,"³² in Barcelona oranges are to this day called *taronjas*, a Catalonian adaptation of the Persian and Arabic *turunj* corresponding to the Talmudic *atranga*, for citron. The present-day Arabic term *turunj* or *trunj* is applied to the citron in Egypt and to the sour orange in Syria; and Linné, the father of modern botanical terminology, definitely adopted *citrus* as the name for the whole genus which comprises citrons, lemons, limes, oranges, shaddocks, grapefruits, kumquats and bergamots.

All this is but natural and founded on sound logic, and the Ancients cannot be expected to have acted differently. Just as they considered the citron, together with other fruits of round shape such as the quince and the peach, as belonging to the family of the apples because the apple was the first spherical fruit of large size known to them, so when they became acquainted with the orange and the lemon—whose close relationship with the citron they could not fail to notice at once—they could not conceive these fruits as being anything else but varieties of the citron, differing from the latter only in shape, colour, or origin. When Monardes, a Spanish botanist of the sixteenth century, maintains that oranges are obtained by grafting citron branches on pomegranate stock,³³ he only follows the opinions of Florentinus (c. A.D. 220),³⁴ of the latter's follower Diophanes (c. A.D. 350),³⁵ and even of Palladius himself,³⁶ all of whom, when speaking of grafting citron-twigs on pomegranate or mulberry stock as a means of obtaining "red citrons," were undoubtedly using this latter term to describe the orange in the same manner as, a thousand years later, Ibn Iyās (1448—c. 1524), in his History of Egypt, designated as "French red lemon" the peculiar, tasteless variety of sweet orange which is to this day termed *burtuqân fransawi* (i.e. French orange) in Palestine and in Egypt.³⁷ The Babylonian Talmud, in

³¹ HG, p. 91.³² Rumphius, quoted by AD, p. 219.³³ AL, p. 230.³⁴ GL, X, vii.³⁵ GL, X, lxxvi.³⁶ LQ, IV, x.³⁷ BK, p. 117.

dealing with the most effective remedies against poisoning through snake-bites, makes the following recommendation: "Take a sweet citron (*atroga halitha*), empty it of its contents, fill it with honey, place it on burning coals, and then eat it;"³⁸ on the other hand, the Persian physician Abu-Mansur Muwaffaq tells us, in his "Book of the Foundations of the True Properties of the Remedies" (about A.D. 970), that in his days oranges were commonly called "sweet lemons."³⁹ It is probable, therefore, that the Talmudic expression "sweet citrons" also refers to oranges, that is to say, that sweet oranges were already grown in Palestine and Mesopotamia during the early centuries of the Christian era. That oranges, either sour or sweet, were grown in these countries in Roman times, seems to be clear from another passage of the Talmud, where it is said that "the spherical citron" is not to be used for ritual purposes;⁴⁰ for the "spherical *etrog*" of the Talmud is very probably the same as the "*round utruj*" of the early Arab writers, and this was certainly an orange.⁴¹ It may also be that Hesychios—a fourth century Greek grammarian of Alexandria—is referring to the orange when he speaks of the *kitrion* (literally, citron) as an "Indian apple."⁴²

On the other hand, Virgil⁴³ speaks of a "citron of bitter juice and lingering taste," which he calls *felicia mala*, i.e. the apple of Arabia Felix, this being the name given by the Ancients to the fertile coastal districts of western and southern Arabia. Similarly Pliny mentions "citron" trees bearing a sour apple.⁴⁴ But during the early centuries of the Christian Era the fertile coast lands of southern Arabia were also called Ethiopia, no doubt owing to the strong racial affinities existing between their inhabitants and those of the opposite portion of the African coast, as well as, perhaps, to the fact that the countries on the two opposite coasts of the Red Sea have on several occasions formed part together of the Abyssinian or Ethiopian Empire. Now, both the Babylonian and the Jerusalem

³⁸ OR, Sabbath, 109b.

³⁹ According to Freitag's "Arabic Lexicon," quoted in LL, II, 271 b.

⁴⁰ OR, Succ. 36a. ⁴¹ See pp. 123-125. ⁴² LU, art. "Citrone."

⁴³ PS, II, 151.

⁴⁴ MC, XIII, xxxi. XVII, xi.

Talmuds contain references to the "Ethiopian citron" (*ha-etrog ha-kushi*) as distinct from the ordinary citron grown in Palestine, it being the view of Rabbi Isaac Bar Hakulah, a third century Palestinian Amora—viz., expounder of the Mishnah or oral tradition—that "Ethiopian citrons actually imported from abroad are not fit for ritualistic use, but that those grown in Palestine from Ethiopian seeds or stock may be used."⁴⁵ In Babylonia, where the Palestinian-grown fruit could obviously be obtained only with some difficulty, the "Ethiopian citron" was considered as ritually acceptable.⁴⁶ "Apples of Yemen" are mentioned in the twelfth century by the Spanish-Arab agronomist Ibn al-Awam⁴⁷ as one of a series of citrus fruit such as citrons, oranges, lemons, of which he gives an extensive list under the heading of "citrons"; and Yemen is an important section of precisely that part of Arabia which the Ancients called Ethiopia. It seems not at all unlikely that by the Ethiopian fruit of the Talmud either the lemon or the sour lime was meant; an important watercourse near Mecca,⁴⁸ along the banks of which excellent sour limes are grown, is called the Wady Limûn (= River of Limes), a fact which certainly seems to point to an old established culture of the tree. We may, I think, safely consider Rabbi Isaac Bar Hakulah's reference to "Ethiopian citrons" grown in Palestine as evidence of the fact that the lemon or the sour lime were grown in that country before the third century A.D., a view which receives strong additional support from the presence of lemons as a decorative motif on sculptured stones of the beautiful second century synagogue at Capernaum, on the shores of the Sea of Galilee (Plate XXIX). And if the lemon or the lime was actually grown on the Arabian shores of the Red Sea and in Palestine, it is only natural that we should find it quoted by Virgil and Pliny and depicted on frescoes or mosaics at Pompei and at Tusculum, and that the Roman gardeners should have at an early date succeeded in growing the tree from seeds of imported fruits if not from cuttings.

The detailed study of the mosaic from Pompei reproduced on Plates XXVII and XXVIII, has led us to conclude

⁴⁵ OS, *Succoth*, 53b.

⁴⁶ OR, *Succah*, 36a.

⁴⁷ HS, II, 292.

⁴⁸ NF, 309 ff. DM, III, 136-137.

that by the middle of the first century A.D. or shortly afterwards the orange tree, whilst being already cultivated in Italy, did not blossom there nor consequently bear fruit. We shall now see that sometime between the latter part of the first and the beginning of the fourth century this difficulty had been overcome and Italian gardeners had succeeded in obtaining oranges from trees grown in the country.

In or about the year A.D. 330 there died in Rome the lady Constantia, a daughter of the emperor Constantine, the Great (306-337). To accommodate the mortal remains of his favourite child, the Emperor built a mausoleum, which during the Middle Ages was converted into a church and dedicated to "Santa Constanza"; it contains some of the finest Roman mosaics still extant. Constantine was the first Roman emperor to adopt the Christian faith and to make it the official religion of the State; the decoration of the ceiling of "Santa Constanza" represents, therefore, the earliest Christian mosaics in existence,⁴⁹ and as there had been as yet neither time nor opportunity for the elaboration of designs more in keeping with the austere mood of the new faith, the artists to whom the Emperor entrusted the task of beautifying the building simply continued to use as their principal decorative themes the same fruits, birds, shells, dancers, grape-harvesting amorette and Psyche, which had been the favourite subjects of the picturesque and frivolous Alexandrian school of pagan painters. Indeed, as one looks at these pictures, one begins to understand the sixteenth century archaeologists who mistook the mausoleum of Constantine's daughter for a temple of Bacchus.⁵⁰ In one of the sections (Plate XXX) of the vaulted ceiling of the circular gallery surrounding the rotunda, it seems as though the artists, perhaps at the request of the Emperor himself, had taken pains to bring together all that the young princess had enjoyed playing with or looking at: branches of various trees, flowers of many plants, fruits from the North and the South, birds of every hue, shells and small amphorae of varied shapes, and, near the upper fringe of the picture, what appears to have been the princess's own hand-mirror. Amongst the fruits, citrons and oranges (Plate XXXI), and

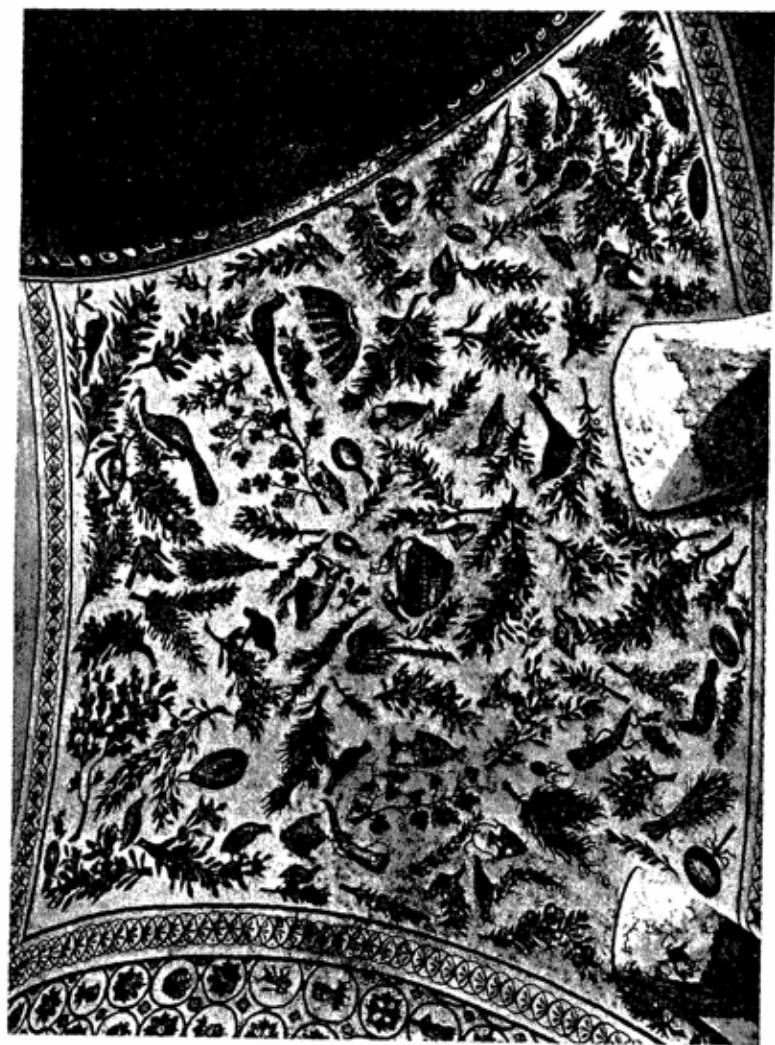
⁴⁹ CW, p. 36.

⁵⁰ CW, p. 37.



Rosette of Lemons on Sculptured Stone at Capernaum. Ruins of Second Century Synagogue.

Photo : The American Colony Photographers, Jerusalem]



A section of the Vaulted Ceiling of the Ambulatorium at S. Costanza, Rome.
Byzantine Mosaics, First Half of Fourth Century.

Photo : Anderson

lemons (Plate XXXII) occupy a conspicuous place, all of them still attached to freshly cut branches covered with green leaves, an unassailable proof of the fact that in fourth-century Italy oranges and lemons were actually grown. The citrons are in some cases fully ripe, of a beautiful yellow colour; in others, they are caught by the artist at that particular moment of their development when their stem-end half is already green whilst the part towards the pistil is still of that dark purple colour characteristic of the fruit in the early stages of its growth. Strings of gold mosaic cubes are used to heighten the brilliance of the yellow colour of citrons and lemons alike.

In A.D. 553 Italy was conquered by the Byzantine generals Belisarius and Narses with the help of Lombard auxiliaries. Belisarius having been recalled, Narses took charge of the administration. His régime, however, was unpopular, and in 565 he was recalled to Greece, the Emperor's order being accompanied by an insulting message from the Empress. Narses, infuriated, thereupon sent messengers to the Lombards in Pannonia bearing some of the fruits of Italy and inviting them to enter the land which bore such goodly produce. Hence came the invasion of Alboin in 568, which wrested the greater part of Italy from the Byzantine Empire. Leo of Ostia, in his chronicle of the monastery of Monte Cassino, says, no doubt on the strength of some old tradition, that it was "cedar apples"—a term by which any citrus fruit may have been meant—that Narses sent to the Lombards in order to tempt them to come to his assistance.⁵¹ The Lombard invasion resulted in the utter economic ruin of the country and in the practical annihilation of all the splendour and beauty with which Roman wealth, wedded to Greek taste, had covered the face of the land. The palatial buildings and luxurious gardens of the rich were wiped out of existence, and together with other delicate plants citron and orange trees disappeared from the Italian landscape, except in Sicily, Sardinia, and in the region of Naples, which remained in Byzantine possession and where, owing to more favourable climatic conditions, the trees had become completely naturalized. They appear to have maintained themselves also in a few isolated and excep-

⁵¹ JF, II, xxxvii (p. 233).



Bird on a Lemon Branch. Mosaic Ceiling at S. Costanza, Rome.
Photo : Anderson]

Jews of Spain did not live only in the cities ; many of them were established on the land, where they had vineyards and orchards.⁵⁶ Bishop Severus of Cologne refers in A.D. 418 to one Theodore, a Jew, who had set out, some time previously, on a journey to Majorca—one of the Balearic Islands opposite the east coast of Spain—in order to visit the properties which he owned there.⁵⁶ About two hundred years later, the letters of Pope Gregory I speak of Jewish farmers in Lombardy who occupy many Christian workmen on their lands ; he writes to the Bishop of Luna, in Tuscany, that he does not want Christian peasants to be slaves, but only serfs (*coloni*) on the farms of the Jewish landowners ;⁵⁷ he refers to large numbers of Jewish *coloni* engaged in cultivating the lands of the Roman Church in Sicily.⁵⁸ What sort of tree would Jews in the Mediterranean countries grow on their farms if not palms and citron-trees, for the sake of the palm branches and the citrons that were indispensable to themselves and to their brethren in central and northern Europe in connection with the Feast of Tabernacles? It will be shown in later chapters that the trade in ritual citrons between the south and the north of Europe has hardly ever ceased throughout the two thousand years of the Jewish Dispersion, and that it was mainly carried on by a special class of merchants who would travel each year, from the great centres of Jewish population in Austria, Germany, or Poland, to Italy, Provence, or Spain for the purpose of selecting in person the "chosen from amongst the chosen" of citrons, the spotless, unblemished fruit which the Law prescribed. It seems only plausible to assume that it was on a similar errand that Theodorus of Cologne travelled south in 418, and that the Balearic Isles were amongst the countries where citrons were commercially grown at the time.

⁵⁶ Graetz, *Gesch. d. Juden*, V, 3, p. 54 ff.

⁵⁶ G. Caro, *Die Juden in ihrer wirtschaftlichen Betätigung im Mittelalter*, 1904, p. 423, quoted by NO, p. 113.

⁵⁷ *Gregorii Opp.* IV, 21, quoted by NO, p. 13.

⁵⁸ *Gregorii Epistolae*, p. 255, quoted by NO, p. 13.

CHAPTER V.

THE RISE OF ISLAM AND THE REVIVAL OF CITRICULTURE IN
THE MEDITERRANEAN WORLD.

IN A.D. 622 occurred the so-called *Hijra*, Mohammed's flight from Mecca to Medina, which was destined to become the zero hour of the Mohammedan era, and within less than a hundred years the Prophet's followers succeeded by a series of as brilliantly conceived as they were ruthlessly prosecuted campaigns, to build up on the ruins of the Persian, Byzantine, and Vandal dominions in Asia and Africa and of the Visigothic kingdom in Spain, an empire of their own, stretching, as one continuous block of Moslem provinces, from the Indus to the Atlantic Ocean. The natural fertility and accumulated wealth of the Persian and Byzantine possessions as well as the sensuous luxury of their city-life could not but exert a powerful fascination upon the stern and sober sons of the desert. After the murder of Ali, the fourth Caliph, his successor Moawiya—the founder of the dynasty of the Omayyads (A.D. 661-749)—transferred the seat of the caliphate and the capital of the empire from desert-bound Medina to Damascus, that is, to the very town which according to tradition, the Prophet Mohammed, on beholding it from afar, refused to enter from fear of the dangerous temptations which its opulence held in store. Abu Jafar el Mansûr (745-775), the second Caliph of the Abbasid dynasty which followed that of the Omayyads, moved the seat of power to Mesopotamia and founded, in 762, Baghdad as the new capital of the empire; the reign of his son Mahdi (775-785) marks the beginning of the golden age of Arab civilisation in the East, with Baghdad as its centre and Harûn al Rashîd (786-809), of "A Thousand and One Nights" fame, as its best known figure. With the marked capacity of the Semite to adapt himself to almost any change of environment and condition, and served by Byzantine engineers and Persian architects and



Cordova: The Orange Court and Clock Tower of the Cathedral, Formerly the Great Mosque of the Western Omayyads.

Photo : Linares]



Sevilla: The Orange Court of the Cathedral and the Giralda.
Photo : Anderson]



Granada: The Garden of the Princess Lindaraja, at the Alhambra.



Granada: The "Court of Myrtles" at the Alhambra.
Photo : Linares]

gardeners, the one-time dwellers of tents became some of the world's greatest builders, the remnants of whose magic cities and enchanted gardens, however severely time has dealt with them, to this day draw annually thousands of admiring visitors to the ancient capitals of Moslem monarchies: Cairo and Kairouan in northern Africa, Seville, Granada, and Cordova in Andalusian Spain.

It was in the sight of evergreen trees and in the sound of running water that the children of the waterless deserts found their chief enjoyment; and so the association of water in all possible shapes and forms—fountains playing in the courtyards, the living-rooms, or the reception halls of their houses and palaces, irrigation channels meandering amongst the trees and flowering shrubs of their gardens, artificial cascades gently dripping or wildly rushing down long flights of stone steps in their terraced parks—with evergreens such as cypress and myrtle, oleander and rose, citron, lemon and orange, became the main source of inspiration and the favourite theme of the townplanners and the architects throughout the Moslem world-empire.

Abd ur-Rahmân I (755-788), the founder of the Omayyad dynasty in Spain, imported not only from his native Syria, but even from India, rare shrubs and seeds for the gardens of his newly-built capital, Cordova.¹ One of his successors, Abd ur-Rahmân III (932-961), whose reign marks the zenith of Moslem civilisation in Spain, was the creator of Cordova's fairy daughter-city, *Medinat az-Zahrah*, so named in honour of the Caliph's favourite slave-girl *az-Zahrah* ("the Splendid One"), a collection of marvellous palaces amidst still more marvellous gardens, where water gushed over quick-silvered glass to glisten in the sun, and rare birds of brilliant plumage, invisibly netted, darted about, and which it took ten thousand workmen twenty-five years to complete.² In or about 976, the Grand-Vizier al-Mansûr, having added the last seven aisles to Abd ur-Rahmân I's great mosque—the so-called "Mosque of the Omayyads"—at Cordova, the largest and most magnificent temple of all Islam,³ completed also its famous *Patio de los Naranjos*, i.e. Court of the Orange Trees (Plate XXXIII), with its nineteen rows

¹ DP, p. 50

² HP, II, p. 152. JZ, I, p. 344 ff.

³ JZ, I, p. 219.

of bitter orange trees, each of which leads up to one of the nineteen arched openings of the Mosque, so that the rows of trees in the "Orange Tree Court" appear as a direct continuation of the rows of columns in the interior, a perfect example of that inter-weaving of building and planting which is one of the characteristic features of Moslem garden-craft. In Seville we find a similar *Patio de los Naranjos* (Plate XXXIV), in front of the Cathedral, once a Mosque; not far from the latter the Moorish palace of the Dukes of Alba, set in a miniature forest of orange trees and myrtles, recalls the days, early in the thirteenth century, when—in the words of the geographer Ismail Ibn Mohammed al-Shakandi, quoted in the *Nafh et Tib* ("The Breath of the Scents") of the Moroccan historian Maqqari—"most of the houses of Seville, not to say all, were abundantly provided with running waters, and spacious courts planted with fruit trees, such as the orange, the lemon, the lime, and the citron . . ." ⁴ At the Alcázar of Seville, the Moorish citadel (*al kasr*) rebuilt by King Pedro the Cruel of Castille, the vaulted grottoes, where, if legend be true, that king's famous mistress Maria de Padilla used to bathe, are, as in the days of the veiled sultanas, surrounded by gardens which are one mass of lemon and orange trees; one of the latter, which grows close to the windows of the quaint "Pavilion of Charles V" and amidst trees planted by that monarch, carries a label with the following inscription: *Una constante tradicion atribuye a este naranjo la antigüedad de seis siglos (Reinando Don Pedro I de Castilla 1360-70)*, i.e. a long tradition ascribes to this tree the age of six centuries, having been planted during the reign of Don Pedro I of Castille, 1360-70. In Malaga as well, Ibn Barutah has described the principal mosque, the court of which "was famous for its beauty and was planted with orange trees of an extraordinary size." ⁵ But nowhere has a more effective use been made of the decorative value of citrus trees than in Granada, that latest dazzling jewel of Spanish-Moslem civilization on its decline, where the Moors made their last hopeless stand against the crusading armies of Isabella the Catholic of Castille and her husband Ferdinand of Aragon. At the Alhambra—the "Red" Citadel—

⁴ JZ, I, p. 59.

⁵ HT, IV, p. 367. AM, p. 27.

the "Lion Court" has lost the dwarf orange trees with which it is said to have originally been planted; but the small and homely "Garden of the Princess Lindaraja" (Plate XXXV), of exquisite privacy, still hides its fountain amongst a thicket of lemon-trees and cypresses, and the marble-lined canal of the ineffably peaceful "Court of Myrtles (*Sahat al-rajahin*) or of the Pool" (*al-birka*) (Plate XXXVI), its smoothness never disturbed by a ripple, mirrors the same beautiful hedge of myrtles, the same few lonely orange-trees, the graceful arches, the glittering mosaics of the niches, the bright openwork of the stuccoed walls, which the Venetian ambassador in Spain, Navagero, described in 1526.⁶ Oranges and lemons reign supreme in the hanging gardens of the *Generalife*, the one-time summer residence of the kings of Granada, which stands practically intact in all its original beauty, owing to its having been given—along with a beautiful Christian damsel—to an aristocratic Moor who had turned Christian and traitor to his country. "Granada"—so writes Peter Martyr, the confidential secretary of Ferdinand and Isabella, in a letter dated from that city—"stands in my opinion higher than any other town under the sun, . . . it enjoys an eternal autumn, it is adorned with citrus trees bearing golden apples of all sorts, and with pleasant glades, so that it vies with the Gardens of the Hesperides."⁷

Sicily was conquered by the Moslems from the Byzantines during the ninth century. In the year 1002, a prince of Salerno, in the Gulf of Naples, was besieged by a Moslem army when a troop of Norman pilgrims on their way back from the Holy Land helped him to drive the enemy off. In order to revenge himself upon the Moslems, when the Normans proceeded on their journey homewards he sent with them an embassy carrying valuable presents including *poma citrina*, i.e. "citrus apples"—either citrons or oranges or lemons—to the Duke of Normandy in order to tempt the latter to come and conquer the countries where these beautiful golden fruits were grown.⁸ The Normans responded to the suggestion, and before the century had come to a close they had succeeded in wresting from the Moslems all their possessions in southern

⁶ LD, p. 19.

⁷ LZ, p. 54.

⁸ JF, p. 233 (Book II, ch. xxxvii). BO, p. 19.

Italy and in Sicily. But during the two hundred years or so of its rule Islam had succeeded in so thoroughly impressing the stamp of its own culture upon the island and its people, that the new conquerors were soon entirely assimilated by the civilization of the conquered. The fondness of the first Norman rulers of Sicily for Moslem art, literature, and manners—some of them went so far as to dress in Arabic style and keep a harem—brought them into violent conflict with the Church but won for them the love of their Moslem subjects, and many a Sicilian poet of Arabic speech sang their praises in poems some of which contain delightful pen-pictures of the royal castles and villas of the time, which were undoubtedly built by Moslem architects.⁹ A particularly charming piece is that in which the poet Abd ur-Rahmân Ibn Mohammed Ibn Omar (c. A.D. 1160) of Butera, extols the beauties of the Villa Fawara (now called *Mare Dolce*), near Palermo, whose gardens were traversed by nine brooks ending in a miniature lake in the centre of which a white pavilion stood on an island entirely planted with orange-trees:

“... The oranges of the island are like blazing fire
amongst the emerald boughs,
And the lemons are like the paleness of a lover who
has spent the night crying because of the absence
(of his beloved).”¹⁰

A similar theme is found in the finest of all Moslem buildings in Sicily, *Al-Azîza*, “the Beloved One”—known to-day as the “Villa La Ziza”—near Olivuzza. The Florentine architect and traveller Leandro Alberti, who saw it in 1525 when it still stood almost intact in its original beauty, has left a minute description of its buildings as well as of the park where, as at the Villa Fawara, “hidden away amongst extensive gardens of lemon, citron, orange, and other fruit trees” lay a small lake containing a little island on which stood a beautiful domed pavilion connected by a stone bridge with the land, and by a flight of marble steps with the water.”¹¹ Orange-trees must also have been one of the outstanding

⁹ NL, II, p. 257.

¹⁰ BY, p. 584. For the Italian translation see BX, III, p. 757.

¹¹ BS, 53 ff.

features in the gardens of the royal palace at Palermo, called the Cubba (Arabic for "dome"); for Nicolaus Specialis, who towards the end of the fourteenth century wrote a history of Sicily, says, in describing the devastation wrought in 1383 in the region of Palermo by the army of the Duke of Calabria, that "the soldiers did not even spare the old sour apple trees which the people call oranges (*acripomorum arbores, quos vulgo arangias vocant*) and which in ancient times adorned the royal palace of Cubba."¹² In some places the very roads seem to have been lined with orange-trees, for a *Via de Arangeriis* (i.e. Street of the Orange Trees) near the village of Patti, is found mentioned in a deed of the year 1094.¹³

As in Spain and Sicily, so in the other parts of the Moslem world. In northern Africa, the palace of the sultan of Morocco was surrounded by large patios in which the people, on days of public audience by the prince, were allowed to take the air amongst beautiful fountains, orange-trees, and myrtles,¹⁴ whilst in Baghdad the Caliph Qâher (931-932) had, in one of the courts of the palace, a beautiful little garden "about a jarib (= a third of an acre) in extent, which he had planted with orange trees brought from Basrah and Omân, of such kinds as have been imported from the lands of India, whose interlaced branches were loaded with red and yellow fruit glittering like stars above a parterre of exotic plants, of balsamines and flowers," a little paradise indeed which Qâher cherished to such a degree that, having been deprived of the throne and blinded by his nephew Radi Billah, in order to prevent the latter from enjoying the beautiful orchard he pretended to have buried there an important treasure, to obtain possession of which Radi promptly had the whole garden dug up so that all the trees were destroyed.¹⁵

As to Egypt, I shall confine myself to quote, from the "Tale of Ali Nur ed-Din and Miriam the Girdle-Girl" in Burton's version of the Thousand Nights and a Night,¹⁶ the delightful description of a garden in Cairo, "wherein was all that soul desireth and that eye charmeth . . . and

¹² OH, col. 1,068 ff. (Book VII, ch. xvii). ¹³ BX, II, p. 445.

¹⁴ Marmol Carvajal's *Descripcion de Africa*, II, 31 (quoted by NL, II, p. 266).

¹⁵ KE, VIII, pp. 335-338. JJ, p. 258.

¹⁶ DN, VIII, pp. 271-272.

in that garth grew blood oranges . . . whereof quoth the enamoured poet:

Red fruit that fill the hand, and shine with sheen
Of fire, albe the scarf-skin's white as snow.
'Tis marvel snow on fire doth never melt
And, stranger still, ne'er burns this living lowe!

And quoth another and quoth well:

And trees of Orange fruiting ferly fair
To those who straitest have their charms surveyed;
Like cheeks of women who their forms have decked
For holiday in robes of gold brocade.

And yet another as well:

Like are the Orange-hills when Zephyr breathes
Swaying the boughs and sprays with airy grace,
Her cheeks that glow with lovely light when met
At greeting-tide by cheeks of other face.

And a fourth as fairly:

And fairest Fawn, we said to him "Portray
This garth and oranges thine eyes survey."
And he, "Your garden favoureth my face,
Who gathereth orange gathereth fire away."

In that garden too grew citrons, in colour as virgin gold, hanging down from on high and dangling among the branches, as they were ingots of growing gold;¹⁷ and saith thereof the 'namoured poet:

Hast seen a Citron-copse so weighed adown
Thou fairest bending roll their fruit on mould;
And seemed, when Zephyr passed athwart the tree,
Its branches hung with bells of purest gold?

And shaddocks that among their boughs hung laden as though each were the breast of a gazelle-like maiden, contenting the most longing wight, as saith of them the poet and saith aright:

And shaddock mid the garden-paths, on bough
Freshest like fairest damsel met my sight;
And to the blowing of the breeze it bent
Like golden ball to bat of chrysolite.

¹⁷ Burton's footnote: Arab. "Ikyán," the living gold which is supposed to grow in the ground.

And the lime sweet of scent, which resembleth a hen's egg, but its yellowness ornamenteth the ripe fruit, and its fragrance hearteneth him who plucketh it, as saith the poet who singeth it:

Seest not the Lemon, when it taketh form,
Catch rays of light and all the gaze constrain;
Like egg of pullet which the huckster's hand
Adorneth dyeing with the saffron-stain? "

Yet, if the Arab or Moorish gardeners' fondness for citrons, oranges, and lemons was primarily due to the charm that lay in the graceful bearing of these trees, in the juicy brightness of their evergreen leaves, in the sweet and lingering fragrance of their blossoms, the phenomenal expansion of citriculture in Moslem countries can only be explained by considerations of a more utilitarian nature, such as the numberless uses that could be made of the fruit, the flowers, and the leaves in medicine, in gastronomy, and in the manufacture of scents.

In the year 765, one Jorjis Bakhtishu, the head of the medical school and hospital at Gondishapur, in Persia—a famous seat of learning founded by Nestorian Christians in Sassanid times—came, together with his family and a number of his pupils, to Baghdad, whither he had been called in order to attend the Caliph al-Mansûr during a serious illness.¹⁸ Prompted by this prince, Jorjis and his pupils translated into Arabic a number of Persian books on medicine. Under Mansûr's successors Harûn al-Rashid and Mamûn, this work was continued on a much larger scale, and since Nestorian medical science was mainly based on Syrian translations of Greek sources, a host of translators were soon at work busily turning out Arabic versions of the principal medical writings of the Greeks. At the same time—possibly as a result of the interest aroused by a scientific mission which Yahya ben-Khaled, the Barmecide vizier of the Caliph Mahdi and tutor of Harûn al-Rashîd, sent to India for the purpose of studying the drugs and other natural products of that country¹⁹—there came to settle in Baghdad a number of Indian physicians of repute, the best known of whom was Harûn al-Rashîd's court physician Manka, the author of an Arabic dictionary of Indian remedies.²⁰ Early Arab

¹⁸ EE, p. 19.

¹⁹ IY, I, p. 279.

²⁰ IY, I, pp. 279-280.

medical science is thus little more than a compilation of the teachings of Greek, and to a lesser extent Indian, medical writers. But the pharmacopeia of both Greeks and Indians was mainly composed of vegetable drugs, and so the diffusion of medical knowledge among the Arabic speaking nations stimulated everywhere a growing interest in botanical studies; and this in its turn led to the appearance of numerous Arabic translations of Greek and Latin works on agronomy, the perusal of which enabled horticulturists to improve their cultural methods and encouraged them to engage in all sorts of experiments, including the acclimatization of plants hitherto not grown in their country.

Conditions, of course, were particularly favourable during this period for the expansion of the culture of citrus fruits and the importation of new varieties; for the constant moving about, between the far-flung provinces of the immense empire as well as between the distant Moslem communities beyond its frontiers, of military and civil officials, of tourists and merchants, and—more perhaps than any other factor—of Mecca pilgrims, furnished at one and the same time a powerful incentive and unique opportunities for ever new naturalizations of exotic plants. Never before, not even during the most active period of Rome's trade with India, had the East witnessed so intensive a commercial activity. As early as the second century A.D., Arabs seem to have been engaged in carrying myrrh to India, the Malay Archipelago, and China.²¹ On the other hand, as soon as the Romans had retired from the Indian Ocean, the Chinese, whose merchants had hitherto gone only as far as Malacca, began to send their own ships to the Persian Gulf and Iraq:²² in the fourth and fifth centuries we find Chinese and Indian vessels frequenting a great fair at Batnae, on the Euphrates.²³ Arabia itself had also been trading with countries further east in pre-Islamic times: a sixth century Christian pilgrim reports having seen at Clisma (a port near present-day Suez) and at Aila (Akabah) vessels that had arrived from India with all sorts of produce from that country.²⁴ But the rise of Islam and its astounding spiritual and military expansion,

²¹ OF, p. 23. IV, p. 480.

²³ PZ, p. 187.

²² PZ, p. 138. OF, p. 23.

²⁴ HL, I, p. 10.

one consequence of which was to turn the Indian Ocean practically into a Moslem Sea, brought into being new facilities for travel and new opportunities for profitable trade; as the Spanish traveller Ibn Jubayr, who visited the Holy Cities of Arabia in 1183, pointed out, the institution of the pilgrimage as an obligation binding on all believers resulted in making of Mecca, where religious duties and commercial activities have never been considered incompatible, for several months each year a gigantic fair for pilgrim-merchants from every country whither Islam had penetrated, that is from the Atlantic Ocean to the Pacific.²⁵ Before the seventh century had come to a close, Arab trading settlements had been founded in Ceylon²⁶ and in several ports of the south-east coast of China,²⁷ notably at Khanfu—then near Hangshow—where a century later (in 877), according to Abu Zeyd of Siraf, Chinese rebels killed 120,000 Mohammedans, Jews, Christians and Parsees, who had established themselves in the city and were engaged in trade;²⁸ after which the centre of Arab trade in the Far East was transferred to Calah on the Malay Peninsula.²⁹ But India, and in particular the west coast of Hindustan, remained the region where Moslem trade was most active: Mas'ûdi, describing Seymur, the principal commercial emporium on the Malabar coast, reports the presence there of a community of about 10,000 Moslems, natives of Syraf, Omân, Basrah, Baghdad and other Arab or Persian cities, not counting those born locally of Moslem parents.³⁰ At the same time, foreign merchants from many countries continued to visit Arab ports, particularly Aden, which Ibn el-Âthir, in the twelfth century, calls "the mart of India, Zanzibar, Abyssinia, Oman, Kerman, and Kish";³¹ whilst large numbers of Jatt, from the lower Indus,³² and many thousands of Zanj—black slaves from Zanzibar³³—were living in the marshy regions on the Lower Tigris and Euphrates whither they had been brought in the eighth century for the purpose of cultivating the farms owned by big absentee Arab land-owners.

²⁵ HX, p. 120. HY (Italian translation), pp. 95-96.

²⁶ MP, pp. 179-180.

²⁷ OF, p. 24.

²⁸ MO, I, p. 128.

²⁹ HP, II, p. 102.

³⁰ MP, p. 220.

³¹ HL, I, p. 379.

³² ON, II, p. 11.

³³ HP, I, p. 306. ON, II, p. 16.

That citrus fruits of chosen varieties were being imported from different countries and marketed in the capital of Iraq may be seen from a passage in one of the stories of the "Arabian Nights"—the Tale of the Porter and the three Ladies of Baghdad—where we are shown one of the ladies stopping at a fruiterer's shop and buying from him apples from Damascus, quinces from Osmanji (in Asia Minor), peaches from Oman, cucumbers grown on the Nile, "Egyptian limes and Sultani oranges and citrons."³⁴ Referring to this passage, Burton says³⁵ that the Sultani oranges had been connected with Sultanyeh city in Persian Iraq, which was founded about the middle of the thirteenth century, but that "Sultani" may simply mean "royal." It may also be that the reference is to the famous loose skinned "King Orange," the best of all varieties of oranges grown in India. Whether these "Sultan" or "King" oranges that were sold in the fruiterers' shops of Baghdad were actually imported from overseas, or whether they were grown in Iraq or somewhere along the Persian Gulf, we cannot say, though it is just possible that there were trees of this variety among those which, according to Mas'ûdi, the Caliph Qâher brought to Baghdad (see p. 117). A variety of oranges called "Sultani" is being grown to this day at Fodele on the Island of Crete; it is practically seedless, and renowned for its beautiful fragrance and delicate taste.

The naturalization of Indian oranges in Oman, Basrah, and Baghdad did certainly not remain an isolated occurrence; for mediaeval Arabic literature contains a number of references to the introduction of exotic plants by Moslem rulers at least in Spain and in Sicily, and it would be strange indeed if citrons, oranges, and lemons, which were such an important feature in Moslem garden architecture, had not had their share in these importations. But how can one account for the fact that, contrarily to what I have shown in previous chapters to be the case, up to this day all writers on the history of citrus fruits have held the view that oranges and lemons were altogether unknown to the Near East and the Mediterranean world until Arabs brought the first trees from India to Iraq in the tenth century?

³⁴ DN, I, p. 83.

³⁵ DN, X, p. 83.

In 943, Abu-l-Hassan Ali ibn Huseyn ibn Ali al-Mas'ûdi of Baghdad, commonly known as Mas'ûdi, one of the greatest of Arab historians and geographers, having spent the best part of his life travelling far and wide throughout the Moslem dominions—from the shores of the Caspian Sea to Madagascar, and from Spain to Ceylon—completed, at Fostât in Egypt, the book that was to make him famous for all times, *Mortûj al-dhahab* ("The Golden Meadows"), an abridged version of his larger encyclopaedic work, now lost, entitled *Akhbar al-zamân* ("Memories of the Times"), in which he had brought together all he knew of the geography and history of the countries he had visited. In the thirty-second chapter of "The Golden Meadows," which treats of the history of the city of Alexandria, Mas'ûdi, referring to the fact that animals as well as plants degenerate when transplanted from their original homes to other climates, wrote as follows:⁸⁶ "Peacocks are remarkably beautiful in India, but, when they are taken to Moslem countries and lay eggs far from their native regions, their little ones become frail; their feathers lose their brightness and their variegated colours, and they retain no more than a vague resemblance with the peacocks of India. This applies only to the males but not to the females. The same may be said of the orange (*al-nâranj*) and the 'round citron' (*al-utruj al mudawwar*) which were brought from India⁸⁷ after the year 300 (A.D. 912), having been first planted in Oman. Thence they were transplanted to Basrah, to Iraq, and to Syria. The trees have now become quite common in the houses of the people of Tarsus and other of the Syrian frontier towns; also in Antioch, and along the Syrian coast, as well as in Palestine and Egypt, where they were unknown before. The fruit, however, has lost its original perfume and flavour as also the fine colour it shows in India, and this is because of the change from the peculiar climate, soil, and water of its native land." On this passage from Mas'ûdi with its reference to "the orange and the round citron which were brought from India after the year 300," Gallesio and, following him, all modern writers on the history of citrus fruits

⁸⁶ KE, vol. II, p. 438. JI, p. 17.

⁸⁷ Simeon Seth, physician and Master of the Wardrobe of the Byzantine emperor Michael VII Ducas (1071-1078), calls citrus fruits "Indian apples," *mela indika* (NV, p. 50).

have relied as evidence to prove that it was the Arabs who first brought the orange tree from India to western Asia, northern Africa, and southern Europe.³⁸ Yet a critical examination of Mas'ûdi's text does not appear to justify the drawing of such a conclusion; neither is it supported by the writings of other Arab authors of the Middle Ages.

Gallesio was not an Arabic scholar, and Mas'ûdi's "Golden Meadows" was not made accessible to European readers until the years 1861-1877, when C. Barbier de Meynard and Pavet de Courteille published the first and so far the only existing complete translation of the original text. But in 1810, that is, just at the time when Galliesio was finishing writing his *Traité du Citrus*, the orientalist Silvestre de Sacy published a French translation of Abd al-Latif's History of Egypt; it is in one of the footnotes to this volume that de Sacy attributes to Mas'ûdi the statement that the round citron was brought from India after the year 300 A.H., that it was first sown in Omân, and that thence it was taken to Basrah in Iraq and to Syria.³⁹ But de Sacy's translation of this passage was based on a quotation of Mas'ûdi by another Arabic writer, Makrizi, and not on the original text of Mas'ûdi; and Makrizi's quotation, and, therefore, also de Sacy's translation, were faulty. What Mas'ûdi really wrote is—in the words of the excellent translation by the English orientalist Le Strange—that Qâher had planted his garden "with orange trees brought from Basrah and Omân, of such kinds as have (or, had) been imported from the lands of India."⁴⁰ It is clear that the *nâranj* and the "round citron" were grown in Iraq before A.H. 300, and that the high value attached by the Caliph Qâher to his own trees was due to the fact that these were of new varieties not previously known in the country. That this was also the view held by later Arab writers appears from a statement by the historian Ibn-Iyâs (1448-c. 1524) who, speaking of the various citrus fruits grown in Egypt, says that "one also finds there the French red lemon which was, so it is said, brought to Egypt in the year A.H. 300";⁴¹ it is not unlikely that the "French red lemon" mentioned by Ibn-Iyâs was the same sweet orange of small size, and of poor taste and

³⁸ AL, p. 60. FN, art. "Citron." MQ, p. 245. AG, p. 41

³⁹ BK, 117. ⁴⁰ KE, VIII, 335-338. JJ, 258. ⁴¹ BK, 117.

fragrance, which is to this day known in Palestine, Syria, and Egypt as *burtuqân fransawi*, that is, "French orange."

As to the exact nature of the citrus trees described by Mas'ûdi as "round citron" (*al-utruj al mudawwar*), de Sacy already remarked that these were probably sweet orange-trees, since, according to Makrizi, it is "when speaking of the orange that Mas'ûdi says that the round citron was brought from India after the year A.H. 300"; in reality, in the manuscript of Makrizi used by de Sacy, the text reads "Mas'ûdi reports in his History" (في التاريخ) but de Sacy is certainly right in his suggestion that this must be a corruption due to a scribe's faulty vocalization, and that the original sentence of Makruzi must have had في التاريخ that is [Mas'ûdi], "in connection with the orange, [reports . . .]." ⁴² Reference has already been made (see p. 106) to the mention of "spherical citrons" in the Talmud. The name *utruj* was used by the Arabs not only for the citron itself but, by extension, for the whole genus; in this latter sense it is the exact equivalent of our term *citrus*, which was used by the Latins, first for the citron, and then for the whole genus. A particularly good illustration of this use of *utruj* as the generic name is furnished by a native of the port of Siraf on the Persian Gulf, who during the first half of the ninth century visited the great Chinese seaport of Canton and left a narrative of his voyage—it probably furnished the foundation for the Arabian Nights tale of Sinbad the Sailor—in which he included a list of "the fruits owned by the Chinese"; in this list there occurs only one name for citrus fruits, namely, *utruj*,⁴³ which shows that, since the region of Canton (Kwang-Tung) was precisely an important orange-growing centre, Suleyman not only must have used *utruj* as a generic term, but considered his compatriots, for whom he wrote his memoirs, to be so familiar with oranges and in general with citrus fruits other than citrons proper, that he did not think it necessary to draw attention to specifically Chinese species not grown in Persia or Iraq. Besides, his fellow citizen and more or

⁴² BK, 117.

⁴³ MO, II, p. 24 (French translation: Vol. I, p. 22).

less contemporary, the physician and botanist Abu Hanîfa ed-Dinûri (d. A.D. 895),⁴⁴ whose observations were mostly made in Oman, speaks of the *utruj* as a tree which bears fruit only once each year⁴⁵ a description which fits the orange not less than the citron tree. Abu Hanîfa must have written his "Book of Plants" at least a quarter of a century before the year A.H. 300 (A.D. 912) mentioned by Mas'ûdi. As to the lemon, this is mentioned in the "Nabataean Book of Agriculture"—some thirty years before Mas'ûdi started writing his "Golden Meadows"—and it is described there as a round fruit derived from the citron. The "Book of Nabataean Agriculture" was, according to his own statement, written by the Iraqi agronomist Abu-Bekr Ahmed Ibn Ali el-Qasdâni (i.e. the Chaldean or Babylonian), better known as Ibn Wahshiya in the year A.H. 291 (A.D. 904).⁴⁶ The Arabs called Nabataeans the native Aramaic-speaking population of the Babylonian plains. Ibn Wahshiya, who was of Aramaean origin himself, in his desire to prove that the ancient Aramaeo-Syrian civilization was superior to that of the Arab conquerors, presented his work as a translation from Nabataean originals and, in order to strengthen his case, he went so far as to quote authorities which never existed except in his own imagination. However, in spite of these forgeries, his treatise remains a document of considerable historical value, seeing that in order to get his book accepted as a genuine document he was bound, at least in regard to cultural practices and species or varieties of plants described, to remain rigorously true to actual conditions in his own days as well as to conditions in the past such as they were reflected in the working methods and the traditions of the people.⁴⁷ That he succeeded in achieving this high standard of verisimilitude is shown by the fact that the only two other important Arab agronomical writers, Ibn al-Awwâm of Seville (twelfth century) and Ibn el-Beithâr (c. 1197-1248) of Malaga, considered Ibn el-Wahshiya as a particularly trustworthy authority on matters of agriculture and did not hesitate to quote him often and extensively in their own works. The "Book of Nabataean Agriculture" itself is lost, and

⁴⁴ IY, I, p. 298.⁴⁶ IY, I, p. 310.⁴⁵ HU, I, p. 21 (§ 16).⁴⁷ HP, II, p. 373.

whatever we know of it is through Ibn al-Awwâm's and Ibn el-Beithâr's quotations or through the references made to it in the "Guide for the Perplexed" of the thirteenth century Spanish-Jewish theologian, philosopher, and physician Maimonides.⁴⁸ Now, amongst the list of plants cultivated by the Nabataeans, Ibn el-Wahshiya mentions not only the citron, but also the orange (*nâranj*) which he describes as a plant of Indian origin,⁴⁹ and the lemon, which he calls *hasia*, adding that *limûn* is the Persian name of the fruit;⁵⁰ since *limûn* is also the term generally used by the Arabs, and since in their writings there is no trace of the word *hasia*, the latter appears to have been a purely Nabataean name,⁵¹ a circumstance which would point to an old established culture of the lemon in Iraq. That it was not only grown, but also known as "lemon," in Egypt before the year A.D. 900, is evident from the contents of certain so-called *Scalae*—glossaries of Coptic, Greek, and Arabic synonyms—found in Egypt dating back to the seventh, eighth, and ninth centuries A.D., and containing the equation: *kortimos*=*el-limûn*.⁵² All this is entirely in keeping with what has been said in the previous chapter about the introduction of the culture of the orange and the lemon in western Asia during the first centuries of the Christian era.

Mas'ûdî left Iraq in the year 913 on his way to India and Africa and did not return home for many years. Had orange and lemon trees not been grown at all in his native country previous to his going abroad, then it would be difficult to explain how he, who made the most careful notes of all interesting new plants met in the course of his travels, does not make a single reference to oranges and lemons so widely grown in India and the Malay States. If we, however, assume that he found and tasted in India new varieties of oranges hitherto not known in Arab countries, and that on his return to Iraq and Syria he found them being grown there already, then we understand why he could definitely state that their importation must have occurred "after the year 300" (A.D. 912), and how he was able to compare the quality of the fruit produced by trees of these varieties when grown in

⁴⁸ JY, Part III, Ch. xxix. ⁴⁹ HS, I, p. 298. ⁵⁰ HS, I, p. 301.

⁵¹ KN, III, p. 68.

⁵² AU, p. 225.

Moslem lands with that of the fruit produced by trees of the same varieties in India.⁵³ Mas'ûdi's "Golden Meadows" terminates with a few lines addressed to readers and copyists, begging the former to be lenient in their judgment of the book, and the latter to be scrupulously faithful in transcribing it. "As to him—so writes the author—who should dare to alter the meaning of this book, confuse the intelligibility of the text, or raise doubts about the veracity of any of its statements . . . may he suffer Divine wrath and a speedy punishment." It does not seem as if Mas'ûdi's curse has been altogether effective in preventing his book being misunderstood and his intentions misinterpreted.

If, therefore, the theory hitherto prevalent, according to which oranges and lemons were unknown to the West until the Arabs brought the first trees from India, turns out to be erroneous, this does not, however, detract in any way from the merits of the Moslems in furthering the expansion of citriculture throughout the countries under their sway and in contributing, both through their own example and through the information and advice conveyed in their writings and in those of a number of Arabic-speaking Jewish scholars, to revive an interest in the growing of citrus fruits amongst the neighbouring Christian nations.

It was Abu Zeyd Hunein ibn-Ishâq (809-873), the son of a Christian apothecary of Hira on the Euphrates and Court physician to the Caliph Al-Mutawaqqil, who laid the foundations of Arab botanical science by translating from the Greek into Arabic the medical works of Hippocrates, Galen, and Dioscorides.⁵⁴ His contemporary Abu'l Hassan Ali ben Rabban et-Tabary, a Persian Jew converted to Islam and a physician of repute said to have been particularly well acquainted with the works of Indian medical writers, published in the year 850 his *Firdûs al-hikmah* ("the Paradise of Wisdom"),⁵⁵ a treatise of medicine and hygiene, in which he recommends the use of powdered citron seed, or frictions made with a decoction of the peeled

⁵³ In another passage, Mas'ûdi says that in 915, when he visited Multân in the Punjab, the Emir of that province was an Arab whose family had its home in Omân.

⁵⁴ KN, III, p. 139. HP, II, p. 360.

⁵⁵ IY, pp. 292-293.

seeds, for the treatment of scorpion bites.⁵⁶ About fifty years later (A.D. 904) Ibn Wahshya completed his "Book of Nabaeian Agriculture" which has already been referred to as the earliest work in the Arabic language to mention specifically the orange (*nâranj*) and the lemon (*hasia, limûn*). Ibn Wahshya not only describes the agricultural and horticultural practices of the peasants of the Mesopotamian plains, but mentions also repeatedly the cultural methods in use in neighbouring countries such as Persia and Egypt.⁵⁷ The book itself, as already pointed out, is now lost and we know of it only through the extracts made from it by later writers. According to Maimonides "it is full of the absurdities of idolatrous people, and with those things to which the minds of the multitude easily turn and perseveringly adhere; it speaks of talismans, of the means of directing the influence of the stars, of witchcraft, spirits, and demons that dwell in the wilderness."⁵⁸ Yet, in spite of these absurdities, Ibn Wahshya's treatise, even through the scanty fragments of it that have been preserved, has much to tell us about the various species of citrus fruits grown in Iraq in his days. Of the lemon-tree, which "like all other [kinds of citrus] is derived from the citron,"⁵⁹ he says that "it bears a fruit that is round and of a pleasant smell; . . . there is a variety of a slightly reddish yellow colour."⁶⁰ He describes the orange-tree (*nâranj*) as an Indian plant, and declares that "it is grown in a great many countries, especially in those having a hot climate; . . . its pulp is sour like that of the citron (the term *nâranj* applies, it is clear, strictly to the sour orange); . . . from its flowers an oil is extracted . . . which has the property of driving away unpleasant smells."⁶¹ Ibn Wahshya who, like many ancient authors, seems to be taking a particular pleasure in imagining all sorts of fantastic unions of plants, says that "if a citron branch is grafted on a laurel or on an olive it will produce very small citrons, of the size of an olive or of a laurel bay,"⁶² a description which fits in a

⁵⁶ HU, I, p. 24.⁵⁷ HS, p. 14.⁵⁸ JY, Part II, Ch. xxix (p. 318).⁵⁹ HS, Vol. I, p. 298 (Ch. VII, Art. xxx).⁶⁰ HS, Vol. I, p. 301 (Ch. VII, Art. xxxii).⁶¹ HS, Vol. I, p. 298 (Ch. VII, Art. xxx). HU, III, p. 357 (§ 2204).⁶² HS, Vol. I, p. 444 (Ch. VIII, Art. x).

remarkable manner the fruit of the kumquat, or dwarf "golden orange" of the Chinese. But these unnatural unions, so Ibn Wahshya warns us, will only succeed if special precautions are taken: "When a tree is grafted into another at the time of a certain conjunction of sun and moon, and is fumigated with certain substances whilst a formula is uttered, that tree will produce a thing that will be found exceedingly useful. . . . The branch which is to be grafted must be in the hand of a beautiful damsel, whilst a male person has disgraceful and unnatural sexual intercourse with her; during that intercourse the woman grafts the branch into the tree."⁶³

Ibn Wahshya was probably just adding the last stroke of the pen to his "Book of Nabataean Agriculture," when another Baghdadi, Ishâq Ibn Imrân, was invited to Kairwân, the capital of Tunisia, to act as court physician to the last Aghlabite Emir, Ziadet Allah III (903-909), surnamed the Parricide. His activities there, which consisted mainly in supervising the prince's diet, do not seem at all to have been well appreciated, for when Ishâq had only been a few years at Kairwân, his fiendish patient, after having put him to death by having the veins of his arms severed, ordered the body to be nailed to a cross where it was left hanging until a bird of prey made its nest in it. Yet, during his few years spent in Kairwân, Ishâq Ibn Imrân managed to write an extremely valuable "Treatise of the Simple Remedies," of which the Munich Library possesses a copy (MS. No. 805), and which has been drawn upon by most subsequent Arab medical writers, in particular by Ibn al-Beithâr who quotes it over a hundred and fifty times;⁶⁴ amongst Ishâq Ibn Imrân's many prescriptions we find hot citronade (or lemonade) mentioned as a remedy against fever, and citron-peel as an appetizer.⁶⁵

Ishâq Ibn Imrân's pupil, the Egyptian Jew, Isaac Ben Shlomoh, better known as Ishâq Ibn Suleymân al-Israëli, who had followed his teacher to Kairwân where he spent the rest of his life—he died in 932—composed there a "Treatise of the Foodstuffs"⁶⁶ (MS. No. 5086 of the National Library at Madrid) which has been for several

⁶³ JY, Part III, Ch. xxxvii (p. 337).

⁶⁴ IY, Vol. I, pp. 408-409. EE, pp. 31-33.

⁶⁵ HU, Vol. I, p. 24. ⁶⁶ EE, p. 8.

centuries one of the principal reference books in use with Arabic speaking doctors. "The juice of the citron (or citrus?)," says al-Israeli, "has subtilizing, incisive, and refreshing properties; it extinguishes the inflammation of the liver, fortifies the stomach, and excites the appetite; it neutralizes an excess of bile, and causes anxiety, which is a consequence of the latter, to disappear; it slakes thirst and arrests bilious evacuations and vomiting. . . . If ink is dropped on a piece of clothing and the latter is rubbed with citron, the ink disappears."⁶⁷ Taken internally, the juice of the citron is a useful remedy against poisons. . . . A decoction made of the seeds, used as a toothwash, has a tonic effect on the gums."⁶⁸

For nearly a whole century after al-Israeli, citrus fruits are not found mentioned in the medical writings of the Arabs, the only exception being a "Book of Remedies," by a Syrian author whom later writers refer to as the Damascene, which contains a prescription for extracting the essential oils of the peel and the seeds of the sour orange.⁶⁹ But around the year 1030 there appeared Avicenna's "Canon of Medicine" (*Qanûn fi-Tibb*) the most widely read and commended of all medical works in the Middle Ages, alike in the Arab and in the Latin world. Abu Ali el-Huseyn Ibn Sina (980-1037)—Avicenna is the name by which he is known in European literature—was born in Bokhara, where, after studying philosophy and medicine when still practically a boy, an almost miraculous cure which he effected at the age of seventeen made his name famous as that of one of the foremost physicians of the age, a reputation which contributed to invest his writings with an authority that remained long unchallenged. In connection with citrus fruits, the "Canon" contains little that is original, except the statement that the peel of the citron (or citrus?), kept in one's mouth, not only purifies the breath and makes it pleasant, but is a useful preventive against infection by the plague,⁷⁰ and a number of recipes for the use of the juice of the sour orange in the preparation of syrups and other pharmaceutical mixtures.⁷¹

⁶⁷ HU, Vol. I, p. 22 (§ 16).

⁶⁸ HU, Vol. I, p. 24 (§ 16).

⁶⁹ AL, p. 247-248.

⁷⁰ CM, Book II, Ch. ii, § 37.

⁷¹ CM, Book V, Ch. I, § 6.

Towards the middle of the twelfth century appeared the "Treatise of the Simple Remedies" of Abu Abdullah Mohammed ben Mohammed el-Husciny el-Ali Billah, better known as the Sherif El-Idrisi, a title due to the fact that his family, through their ancestor Idris, claimed descent from the prophet Mohammed, through the latter's daughter Fatmah. Idrisi was born in the last years of the eleventh century at Ceuta, in Morocco; he visited Spain but lived mostly in Tunis, until King Roger II of Sicily invited him to his Court. There, he composed his "Geography" or, to call it by its correct Arabic title, "The Recreation for Him Who Wishes to Travel Through the Countries," a voluminous work to which Idrisi owes his fame as one of the outstanding geographical writers of mediaeval Europe. Although as a physician he was not a very prominent figure, the scientific methods which he applied in all his investigations whether geographical or medical, lend a certain value also to his "Treatise of the Simple Remedies," which is found quoted more than two hundred times in Ibn el-Beithâr's Dictionary.⁷² There is not much that is original in Idrisi's notes on citrus fruits, with the exception of one or two remarks which I have not noticed in earlier authors, namely: that dried and powdered orange peel, taken with hot water, instantly stops colics; that, taken with olive oil, it provokes the expulsion of long intestinal worms; also that the thin rootlets of the orange-tree, dried and powdered and taken with wine, are an excellent antidote against "poison of a cold nature."⁷³

But the most important contribution in Arabic literature to the knowledge of the medical properties and use of citrus fruits is due to a Cairene Jew, Abu'l Asher Khibat-Allah ben Zeyn-ed-Din Muwaffeq ed-Din, commonly called Ibn Jamîya, who was personal physician to the sultan Salah ed-Din (A.D. 1171-1193)—the Saladin of the Crusaders and Richard Lionheart's opponent in Palestine.⁷⁴ The best known of the writings of this distinguished scientist—the title of *Shems er-Riasat* (i.e. the Sun of the Elders) which was given to him points to the high esteem in which he was held by his contemporaries—is his

⁷² EE, I, pp. 79-80. IV, II, pp. 65 ff.

⁷³ HU, III, p. 358, § 2204.

⁷⁴ IV, II, p. 53.

"Treatise of the Lemon," which has been preserved for us thanks to its having been bodily taken over and incorporated into the "Dictionary of the Simple Remedies" of the Spanish-Arab botanist, Ibn el-Beithâr, whence, early in the sixteenth century, it was translated into Latin by Andreas Alpagus and since then repeatedly published: at Venice in 1583, at Paris in 1602,⁷⁵ at Cremona in 1758.⁷⁶ "Owing," writes Ibn Jamîya, "to its bitterness, its astringency, and its aromatic properties, the peel of the lemon stimulates the appetite, assists digestion, perfumes the breath. . . . Lemon juice, especially when used as a gargle, is a useful remedy against inflammations of the throat, the throttle, the tonsils, and generally against angina, . . . also against indigestions, nausea, vomiting, headache, and giddiness of bilious origin. It counteracts the intoxicating effects of wine. . . . Lemon juice is particularly useful to those people with whom, on account of weakness of their digestive organs, the use of vinegar does not agree; it is, therefore, a good substitute for the latter. . . . As to syrup of lemon . . . made of lemon juice and sugar, this is how it is prepared: put powdered sugar into a cauldron, which is best, or into a well-glazed vessel of earthenware, or a yellow copper pan, and add for every pound of sugar about four drams of milk, or if you have no milk, the white of eggs; having well mixed the lot, add water in sufficient quantity and stir until the sugar is thoroughly dissolved; place the vessel on the fire—preferably a coal fire—and leave it there until the mixture boils and the scum comes up; remove the latter; go on in this manner until the liquid becomes concentrated; then add lemon juice that has been carefully strained, and if necessary a little more sugar according to taste, there being persons who prefer only a slight acidity whilst others like it more pronounced. . . . Mixed with water [this syrup of lemon] quenches one's thirst and revives one's strength through the nutritious elements of the sugar."⁷⁷ There follow a number of recipes for the preparation of lemon drinks to which distinctive flavours are given by the addition of quinces or other fruits, or of scented herbs such as mint. There is a ring of modernity in Ibn

⁷⁵ AR.⁷⁶ AS.⁷⁷ AR, p. 7. AS, pp. 160-167. HU, III, pp. 255-259 (\$2055).

Jamīya's dissertations on the lemon, and he might aptly be called the theorist of the art of the preparation and use of lemonades. It is also in Ibn Jamīya that we first meet with a recipe for preserving lemons, which all subsequent writers have copied and which has been widely used throughout the Middle Ages and right up to modern times: "Take lemons that are fully ripe and of bright yellow colour; cut them open without severing the two halves and introduce plenty of fine salt into the split; place the fruits thus prepared in a glass vessel having a wide opening and pour over them more lemon juice until they are completely submerged; now close the vessel and seal it with wax and let it stand for a fortnight in the sun, after which store it away in a cool place for at least forty days; but if you wait still longer than this before eating them, their taste and fragrance will be still more delicious and their action in stimulating the appetite will be stronger."⁷⁸

With Ibn al-Beithâr, to whom we are indebted for the preservation of Ibn Jamīya's booklet on the lemon, we come to the last important Arabic writer who treated of the medical virtues and uses of citrus fruits. The greatest by far of all Arab botanists, Dhya ed-Din Abu Mohammed Abdallah ben Ahmed el-Malaqi, better known as Ibn al-Beithâr (i.e. the son of the veterinary), was born at Malaga in southern Spain—hence the name *el-Malaki*—in or about 1197, and devoted himself almost from childhood to the twofold study of medicine and botany. In 1219 he left his native country and, crossing over into Africa, started on a long journey eastward through Morocco, Algiers, Tunis, and Tripoli to Egypt, collecting everywhere the plants of the countries and the books of botanical writers. On his arrival in Egypt, Malek el-Kâmel, the then reigning sultan, took him into his service and appointed him inspector of the herborists, or, according to another version, chief of the physicians, of Egypt; taking up his headquarters now at Cairo and now at Damascus, he continued his travels of exploration, studying in turn the plant-life of Arabia, Palestine, Syria, Mesopotamia, and part of Asia Minor, incessantly and untiringly, and in a spirit of scientific thoroughness far in advance of the

⁷⁸ AR, p. 12b. AS, p. 114. HU, III, p. 259.

ordinary standard of the age. His friend and disciple Ibn Ali Ossaybiah has written that whilst exploring together with Ibn al-Beithâr the country around Damascus, where they identified many new plants, they always carried with them "the writings of Dioscorides, of Galen, and of El-Ghafeki, and other similar works." Ibn al-Beithâr was in Damascus when death overtook him in 1248.⁷⁹

It was by the order of El-Malek's son and successor Es-Salah Najm ed-Din Ayub that Ibn al-Beithâr undertook the compilation of his principal and most famous work, *Jami al-Mufridat*, i.e. the "Dictionary of the Simple Remedies," which is dedicated to that prince.⁸⁰ In it the author has described in alphabetical order all the vegetable, animal, and mineral drugs used in his time, making of course, a lavish use of the writings of his predecessors, but in each case after taking great care to control their statements and to supplement them through personal observation. About half of this enormous treatise is made up of quotations from Greek sources, in particular from the works of Dioscorides and Galen, whose discourses on drugs are reproduced *in extenso*; the other half comprises quotations from Arabic, Jewish, Persian, Syrian, Chaldean, and Indian writers whose works were available at the time in Arabic translations. In each case Ibn al-Beithâr takes care to mention the name of the author from whom the quotation is taken, and for every one of the 1,400 plants or so of which he treats he mentions all the different Arabic names by which it was known. Since the days of Dioscorides until as late as the Renaissance there has been produced no work on botany comparable in value or importance with the "Dictionary of the Simple Remedies." Amongst Ibn al-Beithâr's personal contributions to medical lore in regard to citrus fruit, the most interesting ones are probably some of his notes on citron oil, which he recommends as a cure for many evils. "It has a wonderfully warming effect when used in frictions on the sole of the traveller's feet in cold weather; applied to an aching joint, it relieves the pain; it is useful against paralysis, twitches, shivers, cramp, sciatica, pains in the joints or in the back, . . . pains in the kidneys caused by cold, toothache due to a similar cause . . . ; rubbed into

⁷⁹ HU, I, pp. vi-ix.

⁸⁰ HU, I, p. 1. KN, III, p. 228.

the hair, it stimulates its growth.”⁸¹ And these are the different recipes recommended by Ibn al-Beithâr for the preparation of the precious oil: “Take a pound of jasmin oil and as much oil of gillyflower, and add, for each pound of oil, the peel of three citrons; change the citrons every three days, and proceed in this wise until the oil is scented and diffuses a pleasant smell. Or, take a citron that is still green and not ripe; remove its peel by means of a knife made either of iron or of glass, and place the peel so obtained in a cauldron; pour on it oil of jasmin and roses and let it gently simmer on a fire until the peel turns white and the liquid has taken on the smell of the citron; remove the vessel from the fire, cover it, and leave it standing for one day and one night; then strain it and, once the mass is quite pure and contains no more water, add musk-scented *suk* and camphor; it will give wonderful results. Citron-oil is also obtained by rubbing with a piece of cotton wool, previously saturated with sesame-oil, citron fruits still on the trees, three times a day, for forty days in succession; then the fruit is picked and the oil is gently scraped off its surface by means of a small silver spoon. Or, a small citron is placed into a dish full of sesame-oil, which is kept well covered up until the oil has acquired the scent of the fruit; from time to time the citron is replaced by another one, and this goes on as long as is necessary for obtaining the degree of strength required in the oil; then the oil is strained. A last method consists in taking a perfectly ripe citron which after being picked is left lying for one night, and in gently scraping its surface with a smooth-edged shell or silver oil vessel; the liquid so obtained is placed in a glass bowl, which is fumigated two or three times with amber scent whilst the oil is temporarily transferred to another vessel; the larger the number of fumigations, the stronger will the oil be scented and the more effective will it be against affections of the brain; when the oil is ready, it is collected in a narrow-necked bottle of glass which is then closed with bees-wax in order to insure the better keeping of the oil; this is an oil possessed of the most wonderful properties; it is counted among the scents used by the wealthy and by royalty.”⁸² Here we have in their essentials the various methods still used to-day in Sicily, in southern France,

⁸¹ HU, II, p. 124 (§ 945).

⁸² HU, II, pp. 124-126.

in the United States of America, and in Palestine, in the extraction of essential oils from oranges, lemons, and citrons.

No wonder that the culture of trees so highly ornamental, bearing fruit of such exquisite taste and fragrance, trees of which every single part lent itself to so many different uses—the leaves and blossoms as well as the fruit, even the wood itself, of which most beautiful furniture was made⁸³—no wonder, I say, that the culture of these trees, spreading from the gardens of the rich to commercial orchards where the fruit was grown for profit, expanded as rapidly as the progress of military conquest or of commercial enterprise would allow, and that soon in the huge Moslem empire there was hardly a corner left where citrus trees were not widely grown.

We know already from Mas'ûdi that during the early part of the tenth century, in addition to the citron (*utruj*), the sour or bitter orange (*nâranj*) and the fruit which he calls "the round citron" and which appears to have been a sweet orange (see p. 106) were commonly grown in Oman, Iraq, Syria, Palestine, and Egypt. In another passage than those which have been quoted before, Mas'ûdi narrates how, at Baghdad, the Caliph Mustaqfi Billah (A.D. 944-946) having once invited a number of boon-companions to a dinner at which each of them was to recite famous poets' verses referring to the various dishes that would be served, one of the guests recited a poem by one Abu'l Huseyn mentioning amongst the choicest hors d'oeuvre apt to "whet the appetite and to revive the keenness even of the most blasé stomach . . . a *turunj* cut in slices and strewn with a mixture of powdered *nedd* (a scent) and ambergris."⁸⁴ The word *trunj* or *turunj* has been used in Arabic-speaking countries for different citrus fruits: in Syrian Tripoli and in northern Palestine it is used for the sour orange, in southern Palestine for the citron, in India also for the citron, whilst in Catalonia and in the Balearic Islands *toronja* or *taronja* has always meant and still means the orange, without distinction as to whether sour or sweet.⁸⁵ As it is not likely that the Baghdadis in Mas'ûdi's days used both *nâranj* and *turunj*

⁸³ HH, fo. 93.

⁸⁴ KE, VIII, p. 408 (Ch. cxxix).

⁸⁵ HH, fo. 91 ff. BF, pp. 13-16.

for one and the same fruit, it is quite possible that by the *turunj* of Abu'l Huseyn a sweet orange was meant.

A few years after the appearance of Mas'ûdi's "Golden Meadows," Al-Istakhrî (Abu Ishâq al-Farsi al-Istakhrî), a native of Istakhr in the Persian province of Fars, a great traveller, trustworthy as an observer if poor as a botanist, wrote his *Masâlek al-mamâlek*, or "The Book of the Countries," in which he mentions having seen *utruj* (a term which here is certainly used for citrus fruits generally) grown in Ram Hormuz on the Persian Gulf⁸⁶ and in Balkh⁸⁷ (in present Afghanistan), whilst in treating of Mansûra in the Punjab he describes a variety of sour limes, *laimûnah*, grown in the district.⁸⁸ Ibn Jubayr (Abu'l Huseyn Mohammed Ibn Ahmed Ibn Jubayr) of Valencia in Spain, secretary to a king of Granada, and thrice a pilgrim to the Holy Cities of Arabia between 1183 and 1217, mentions in his diary *utruj* amongst the fruits found on the markets and in the shops of Mecca.⁸⁹

In Palestine and Syria, Shams ed-Din Abu' Abdallah Mohammed Ahmed al-Bashari, a native of Jerusalem and therefore commonly known as Muqadassi (i.e. the Jerusalemite), a traveller through many countries, whose "Description of the Lands of Islam" is considered the most original among the more important Arabic geographies of the middle ages, mentions the *utruj*—some manuscripts read *utrunj*—and *nâranj* among the articles of commerce of these countries.⁹⁰ Some sixty years later (1047) the Persian poet and traveller Nasir-i-Khusraw published the *Sefer-Nameh*, or "Treatise of Travel," in which he relates in detail all that befell him and all he saw on his journey from Merv in Khorassan across Persia, Iraq, and Asia Minor to Aleppo, Jerusalem, Mecca, and Cairo. Outside Tripoli on the Syrian coast, he found the countryside covered with large fields of sugar-cane and with groves of *nâranj* (sour oranges), *turunj* (possibly sweet oranges, as suggested by Ch. Schefer, the French editor and translator of the book), bananas, and *laimû*

⁸⁶ HZ, p. 166. IA (German translation), p. 59.

⁸⁷ HZ, p. 173. IA (German translation), p. 120.

⁸⁸ HZ, p. 280. IA (German translation), p. 83.

⁸⁹ HX, p. 120. HY, p. 96.

⁹⁰ KW, p. 71. KX (English translation), p. 71.

(lemons);⁹¹ and the Palestinian sea-port of Caesarea he describes as "a fine city, with running waters and palm-groves, and *nâranj* (sour orange) and *turunj* (sweet orange?) trees."⁹² An anonymous Christian pilgrim who, it is believed, visited Palestine before the year 1187, says that in that country "there are lemon trees, whose fruit is acid, and other trees which bear fruit called Adam's apple (= the shaddock) wheron the marks of Adam's teeth may be right plainly seen . . . There are also cedar trees (= citron trees) which bear a great fruit, as big as a man's head, but somewhat oblong . . . And you must know that the cedar of Lebanon is an exceedingly tall tree, but bears no fruit; but the cedar of the sea-coast is small, and bears fruit."⁹³ On the 10th of September, 1191, Richard Coeur-de-Lion's army of English crusaders, who three days previously had defeated the sultan Saladin at the battle of Arsuf, arrived at Jaffa, where they found the town in such a ruined state that they could not find lodgings in it. They, therefore, encamped outside the walls in an olive garden where—in the words of Geoffrey de Vinsauf, the chronicler of Richard's Crusade—"they refreshed themselves with abundance of fruits, figs, grapes, pomegranates, and citrons, produced by the country around."⁹⁴ The absence of any reference to oranges or lemons may be either due to Geoffrey de Vinsauf using the term "citron" for citrus fruits generally, or, more probably I think, to the fact that in Palestine citrons are the only citrus fruits that are mature early in September, whilst lemons and shaddocks are not sufficiently ripe for use until a month, and oranges not until two months, later.

The passage quoted above from the Anonymous Pilgrim was incorporated, a few decades later, by Jacques de Vitry in the account of the fruits of Palestine which he included in his "History of the Crusades." A parish priest in Argenteuil, an unimportant township in the north of France, Jacques de Vitry had, by preaching the Crusade against the Albigenses, won both notoriety and an influence which he decided to devote entirely to the recovery of the Holy Sepulchre. Appointed Bishop of Acco (Acre)

⁹¹ LC, p. 17. LB, p. 40. LB₂, p. 6.

⁹² LC, p. 26. LB, p. 61. LB₂, p. 20.

⁹³ CC, pp. 34-35. ⁹⁴ PR, p. 247.

in 1217, de Vitry appears to have spent in that city most of the few years of his sojourn in Palestine; sometime between 1220 and 1227 he went back to France. In 1229 he was in Rome where Pope Gregory IX created him Cardinal and Bishop of Tusculum; appointed Patriarch of Jerusalem in 1240, he died, however, before he could embark again for the Holy Land. The merits of his History of the Crusades, which is practically copied from William of Tyre, have been much exaggerated; the same is true of his botanical notices which Gallesio and others took for original, whereas they are so only in part. "Besides the trees which are commonly found in Italy, in Germany, in France, and in other parts of Europe, there are in Palestine other trees which are peculiar to that country, fruit trees as well as others . . . there are trees which bear fruit that is very fine and of the colour of the citron, on which one would fain recognize the impression of the teeth of a man as if one had bitten into it, the which causes them to be called *Adam's apples*. Others bear fruit that is sour and of a prickly taste, the which are called lemons. In summer the people use the juice of these fruits when eating meat and fish, because it is cold, refreshing to the palate, and it stimulates the appetite . . . The cedars of Lebanon are very fine trees, which rise to a great height, but do not bear fruit. Other cedars, which are called sea-cedars, are small, but they give plenty of fruit, and this, which is very beautiful and very good to eat, is called the *citron* or *citron apple*. It is thought that it is of this fruit that the Lord has said in Leviticus: 'Thou shalt take on the first day branches of the goodliest trees with their fruits.' On other trees, also of small size, there are found citron apples (*poma citrina*) less cold and less sour, which the natives have named *orange-apples*."⁹⁵ The Latin text, with its reference to oranges as another kind of *poma citrina* enables us to establish the fact that this expression (i.e. *poma citrina*) in the language of the age was used to describe now citrus fruits generally and now the citron in particular, just as was the case with the Persian *turunj*, the Hebrew-Aramaic *etrog*, and the Arabic *utruj*. In the fact that Jacques de Vitry describes the shaddock, the lemon, the citron, and the orange as typically Palestinian

⁹⁵ PT, pp. 175-177 (Book I).

trees "not commonly found in Italy, Germany, France, and other parts of Europe," Gallesio,⁹⁶ Löw,⁹⁷ and others have seen an argument in support of their theories regarding the date of the first introduction of the orange and the lemon to the Mediterranean countries, believing that de Vitry's statement shows that by the year A.D. 1200 oranges and lemons were not yet cultivated in southern European countries. Facts, of course, are in direct contradiction to such views; moreover, between "not grown in Europe" and the words actually used by de Vitry—"not commonly found in Italy, Germany, France, and other parts of Europe"—there is a wide margin. Besides, as will be shown in the next chapter, even at a time when citrus fruits were already widely grown in Italy, they were still being looked upon in that country as typically Palestinian trees. A curious fact—in keeping, it is true, with the lack of critical faculty that characterizes the whole of de Vitry's writings—is the belief, still held by him after a stay of several years in Palestine where he no doubt had many opportunities of seeing and studying the fruit, that the citron was produced by a particular variety of the cedar.

Another pilgrim who visited Palestine and left an account of its citrus fruits was Burchardt of Mount Zion, a South German monk of the Dominican Order, who went to Jerusalem in 1232, and is believed to have spent there about ten years; in the "Description of the Holy Land," which he wrote about half a century later (A.D. 1280), he mentions amongst other fruits "oranges, and lemons, and Adam's apples, from which the natives make pickles to eat with fowls, fish, and other food, and they make food very palatable."⁹⁸ Another German monk, Felix Fabri (c. 1481) describes "a garden planted with orange trees and pomegranates" in the ancient palace of the Kings of Jerusalem, adjoining the Holy Sepulchre.⁹⁹ The Frenchman Monconys (1647) records a visit, at Beyrut, to "the house and gardens which the Emir has started building, and which are the finest of the Turk's whole state, and which might also in Christendom be pronounced beautiful; there are, there, very fine Adam's apples (= shaddocks)

⁹⁶ AL, p. 257.

⁹⁸ DL, p. 100.

⁹⁷ JT, pp. 280-281.

⁹⁹ FS, Vol. 1, Part ii, p. 394.

which are big round oranges." ¹⁰⁰ Of this same garden the English traveller Henry Maundrell, who saw it exactly fifty years later, left the following description: "It contains a large quadrangular plat of ground, divided into sixteen lesser squares, four in a row, with walks between them. The walks are shaded with orange trees, of a large spreading size, and all of so fine a growth both for stem and head, that one cannot imagine anything more perfect in this kind. They were, at the time when we were there, as it were, gilded with fruit, hanging thicker upon them than ever I saw apples in England. Every one of the sixteen lesser squares in the Garden was border'd with stone; and in the stone-work were troughs very artificially contriv'd, for conveying the water all over the Garden: there being little outlets cut at every tree, for the stream, as it pass'd by, to flow out, and water it. Were this place under the cultivation of an English gardener, it is impossible any thing could be more delightful. But the *Hesperides* were put to no better use, when we saw them, than serve as a fold for sheep and goats; insomuch that in many places they were up to the knees in dirt. On the East side of this Garden were two terrace walks rising one above the other, each of them having an ascent to it of twelve steps. They had both several fine spreading orange trees upon them, to make shades in proper places. And at the north end they led into booths, and summer-houses, and other apartments very delightful, this place being design'd by *Faccardine* for the chief seat of his pleasure." ¹⁰¹

In 1673 the padre Anthony Gonzales wrote that in the Levant "citrons and lemons were cheaper than ordinary apples in our country, practically every dish being adorned with them . . . In Calabria I saw very fine citrons weighing several pounds apiece, but those at Tripoli, in Syria, are still bigger, as big as ordinary melons, so that I dare not state their weight since it would sound incredible." As to oranges, "although Italy has an over-abundance of orange trees, yet in the East and in Egypt the oranges are incomparably more numerous, better, and bigger; there is hardly a garden, no matter how small it may be, without its orange tree, in some gardens even the hedges being

¹⁰⁰ KS, Vol. II, pp. 335.

¹⁰¹ KI, pp. 39-40.

made of them."¹⁰² A few years later (1682), the Dutch painter Cornelis de Bruyn describes and illustrates some giant "Buddha-hand" type of citrons from Gaza, one of which was "at least fourteen inches long and five and three-quarter inches in diameter";¹⁰³ he also mentions the "large number of gardens and the many orange trees of Sidon."¹⁰⁴

In regard to Egypt, we have already dealt with the references to the culture of citrus fruits in Mas'ûdi's "Golden Meadows" of the middle of the tenth century. Much more definite and precise is the information provided by the Baghdad physician Muwaffaq ed-Din Abd el-Latif ben Yûsuf (1160-1231) in the first chapter of his "Description of Egypt": "Of the sour fruits (*hamidhât*) there are to be found in Egypt many different kinds which I have never seen in Iraq. Among these are the big citrons, the like are hardly to be met with in Baghdad, as well as the sweet citron, which contains no acidity at all. Amongst the fruits peculiar to Egypt one must also count the lemons that are called compound, of which there are several varieties some of them as big as a watermelon; also another kind of lemon called *mukhattam*, or "sealed," which is of a very dark and more lively red colour than the *nâranj*, perfectly round, slightly flattened above and below as if one had crushed it by the forcible impression of a seal up it . . . Some citrons contain within them another citron complete with its yellow peel . . . I have seen similar ones in the Ghôr (= the deep rift of the Jordan and the Dead Sea valley, in Palestine). It is in the sour citron that this inner citron is to be found. These different forms enter into combinations with each other, and this results in an infinite number of varieties."¹⁰⁵ The sour citron containing another smaller citron within it is obviously a fruit presenting the peculiar malformation which American orange growers call "navel"; the "compound lemon" is already found mentioned in Ibn el-Jamîya, who defines it as the tree obtained through grafting a lemon scion on citron stock;¹⁰⁶ as to the term *hamidhât* (sour fruits), it is clear that we have here the

¹⁰² GT, vol. II, pp. 372-373.

¹⁰³ DK, p. 297 and fig. 150.

¹⁰⁴ DK, p. 322.

¹⁰⁵ BK, Book I, ch. ii (p. 31).

¹⁰⁶ HU, III, p. 258.

origin of *agrumi* (from *agro*, meaning sour), the Italian name for the genus *citrus*: "*mala*—writes Ferrarius—*quae ab acore nominantur*," i.e. apples which owe their name to their sourness.¹⁰⁷

Abd el-Latif, it will be noticed, mentions neither oranges nor ordinary lemons or citrons; but that is because, as he himself says, he wishes to refer only to varieties which were not known in Iraq. An Italian Jewish pilgrim, Rabbi Meshulam ben R. Menahem, of Volterra, who travelled from Cairo to Jerusalem by caravan, in July, 1481, describes at El-Arish a well or cistern of brackish water, near which "at night there came upon us a swarm of insects found in the sand of the desert, as large as two flies, and rather red. They say that these are the lice with which Pharaoh was plagued, and they bit me big bites, but fortunately we had lemons which we brought with us from Misr (Cairo), because we knew about them, that there was no remedy to their bite except lemon juice, for the juice prevents the wound^d festering in man's flesh . . ." ¹⁰⁸ Ibn Iyâs (Abu'l Barakât Mohammed Ibn Iyâs, 1448-c. 1524), in his great "History of Egypt," enumerates, as grown in that country, all the four species of citrus, namely the citron, the shaddock (*kubâd*), the lemon, and the orange, as well as a fruit which he calls the *hammâdh shu'ayri* (i.e. the hairy citrus) and which is perhaps no other than the mandarine, in which as a matter of fact the white fibrous tissue on the inside of the peel is not one solid mass as in the orange, the citron, or the lemon, but is formed by a large number of fibres loosely attached to each other. "One also finds there—continues Ibn Iyâs—the French red lemon (*al-laimûn al-ahmar al-franseys*) which, it is said, was brought to Egypt in the year A.H. 300."¹⁰⁹ This "French red lemon" is evidently identical with the tasteless sweet orange of small size still occasionally grown in Palestine and Syria, where it is called *burtuqân fransawi* (French orange); the passage shows us, (a) that in the opinion of some Arab writers Mas'ûdi's statement regarding the naturalization of Indian orange trees in Egypt around A.D. 900 referred to sweet oranges, and, (b) that in Arab countries, even as late as at the end of the fifteenth or the beginning of the

¹⁰⁷ AJ, I, ix (p. 46).

¹⁰⁸ IE, p. 178.

¹⁰⁹ BK, p. 117, note by de Sacy.

sixteenth century, the sweet orange was sometimes called a lemon (cf. p. 33), for the name "Chinese lemon" given to the orange in certain parts of the Malay Archipelago). That the shaddock was grown not only as a decorative tree or for pickles but also, like the grapefruit to-day, for the table as a dessert fruit, is to be seen from a passage in the Tale of Azîz and Azîzah, of the Thousand and One Nights, where the hero of the story, invited to meet the lady of his heart at supper time in her garden, finds there "a table covered with a silken napkin, and on its edge a great porcelain bottle full of wine, with a cup of crystal inlaid with gold; near all these was a large tray of silver . . . and therein fruits of every kind, figs and pomegranates, grapes and oranges, citrons and shaddocks (*kubâd*) disposed amongst an infinite variety of sweet-scented flowers, such as rose, jasmine, myrtle, eglantine, narcissus and all sorts of sweet-smelling herbs."¹¹⁰

Citrus fruits were grown everywhere along the north and east coasts of Africa. Ibn Hauqâl, writing in A.D. 977, describes the important fortified city of Kastiliyah (Tuzer) in Tunis, which "provides fruit to the whole province of Africa," as surrounded by "extensive orchards where big quantities of *utruj* of large size and excellent quality are grown."¹¹¹ And at Sousse, on the Tunisian sea-shore, he mentions *utruj* "beautifully scented, excellent of taste, like which I did not see any in the whole country."¹¹² As the French translator of Ibn Hauqâl, Baron de Slane, suggests, *utruj* here stands for oranges.¹¹³ According to a statement in Idrîsî's "Geography" (A.D. 1154), orange-trees were at that time very common in Morocco;¹¹⁴ and Ibn Batûta (Abu Abdallah Mohammed ben Abdallah ben Mohammed ben Ibrahim al-Lawati al-Tanji, c. 1303-1377), of Tangiers in Morocco, the greatest traveller of Islam and the author of some of the most fascinating travel-books ever written, describes the island of Mombasa, in 1328, as abounding with the banana, the lemon, and the citron,¹¹⁵ whilst at Maqdashân, a little further north along the coast, "boiled green bananas, prepared with lemons, fresh ginger, and *anba* (the mango) constituted one of the staple foods of the natives."¹¹⁶

¹¹⁰ DN, II, p. 310.¹¹¹ HW, p. 71.¹¹² HT, I, p. 191.¹¹³ HV, p. 67.¹¹⁴ Quoted by AM, p. 26.¹¹⁵ HV, p. 175.¹¹⁶ HT, I, p. 185.

In Spain, where the hot plains of Andalusia, sheltered from the north-winds by the long chain of the Sierra Morena and abundantly watered by the snows of the Sierra Nevada, offered ideal conditions for the culture of all semitropical plants, it is no matter for surprise that the technical problems of citriculture have been repeatedly dealt with by Moorish writers. In the beginning they made, of course, no original contributions to the science of citriculture, but acted mainly as interpreters of the Greeks and the Romans to the Arab world. Such is the case, for example, with Ibn Hajāj (Abu Omar Ahmed Ibn Mohammed Ibn Hajāj) of Seville, whose lost treatise "*Al Moghnâ*" (= The Adequate One), written in 1073 or 1074, contained a number of references to the culture of citrus fruits translated from the works of classical writers. Abu'l Khayr, also of Seville, who probably wrote sometime during the first half of the twelfth century, displays already more originality, especially in connection with the rules he formulates for the laying out of gardens: "In order to obtain the best effect, trees that shed their leaves in winter should not be associated with those that keep theirs; these latter are planted in the proximity of doors and water tanks or fountains: such are the laurel, the myrtle, the cypress, the pine, the citron, the jasmin, the orange, the shaddock (which he calls *zamboa*), the lemon, and others of a similar character."¹¹⁷ He has also another name for the shaddock, namely *bustanbîn*,¹¹⁸ and of this tree he says that "it ought not to be grafted on any other species, just as it does not suffer any other trees to be grafted on it."¹¹⁹ We learn from his writings that the use of grapefruit on the table is not as modern a practice as most people believe, for—says Abu'l Khayr about the shaddock—"one eats both its outer and its inner parts (i.e. the peel as well as the pulp)."¹²⁰ Valuable contributions to citricultural technique must have been made by Al-Hâj, of Granada, who is believed to have composed around the year 1160¹²¹ an important agricultural and horticultural treatise, of which unfortunately nothing remains but a few sentences quoted by Ibn al-Awwâm; but they suffice to give us an idea of the author's critical mind and independence of thought, as well as of the

¹¹⁷ HS, I, p. 137.¹¹⁸ HS, I, p. 292.¹¹⁹ HS, I, p. 300.¹²⁰ HS, I, p. 300.¹²¹ KN, III, pp. 258-25.

systematic and truly scientific manner in which he conducted experiments in order to test the validity of some of the statements of ancient writers. Thus, in connection with the fanciful plant-unions recommended by the Greeks, such as grafting citrons on pomegranate stock in order to obtain red-coloured fruit, Al-Hâj says that although he made several attempts to effect such a union he was never successful.¹²² Reporting on experiments made in order to find out the safest way of transplanting fruit-trees at different times of the year, and after describing in detail the methods used and the measure of success achieved with trees of different sorts, he goes on to say that he used the same methods in the transplantation of a citron tree, a myrtle, and a jasmin, during the month of August, on irrigated land, and that the trees did not suffer in the least. He adds that he twice repeated the same operation on each of these trees at the height of their blossoming period, always following the same method, and the trees gave fruit the same year, thus showing that they had not suffered any damage.¹²³ The writings of Abu'l Khayr and of Al-Hâj are, together with the Book of Nabataean Agriculture, amongst the principal sources drawn upon by Ibn el-Awwâm for his *Qitâb el-Falâhah* (= The Book of Agriculture), the most important of all existing Arabic works on agriculture.

Abu Zakariya Yahya Ibn al-Awwâm, a native of Seville, flourished during the second half of the twelfth or the beginning of the thirteenth century, and his book has justly been described as a compendium of the whole agricultural knowledge of his time. It treats altogether of some 600 plants, in connection with most of which Ibn al-Awwâm gives detailed instructions as to the manner of growing them, the uses to which they can be put in agriculture, in industry, or in medicine, and—in the case of vegetables or other edible plants—the different ways of preparing them for the table. Chapter VII, which treats of "Trees commonly grown in certain parts of Spain," contains four short chapters, or articles, dealing respectively with the citron (*utruj*), the orange (*nâranj*), the shaddock (*istiub* or *zamboa*), and the lemon (*laimun*); the article on the citron opens with a nomenclature of all the

¹²² HS, I, p. 402.

¹²³ HS, I, pp. 199-200.

species and varieties of citrus fruits then grown in Spain.¹²⁴ He reproduces Ibn Jamīya's recipe for pickling lemons, adding that immediately before using them, some people add to them honey and saffron.¹²⁵ The *Qitāb al-Falāhah* is not so much a didactic treatise methodically written, as a compilation of what the author thought was best in the agronomical writings of the Nabataenas, the Greek, the Romans, and the Arabs. But not always is he well served by his judgment, and now and then one will find him giving credence to the strangest superstitions. "Women," says Ibn al-Awwām, "should not be allowed to come near citrus trees unless they are in a state of absolute purity and unimpaired health; if a tree be touched by a woman at the time of her period, it will wither and drop its leaves and part of its fruit."¹²⁶ Neither do citrus trees bear the presence in their proximity of certain other plants: "Care must be taken not to plant, close to a citron or to an orange tree, either rue, or plane, or melissa, or euphorbia, or any other plant that diffuses a strong smell; for the trees will suffer by it."¹²⁷ But, "if a woman eat of an orange, or of a citron, or of a lemon, it will banish all evil thoughts from her mind."¹²⁸

The belief that certain persons, or animals, or plants, exercised in some mysterious way a baneful influence on others was part and parcel of the legacy bequeathed by Antiquity to the Middle Ages, and in later chapters we shall have occasion to see that fully half a millennium after Ibn al-Awwām European scientists of renown were still conducting experiments in order to test the validity of the very same superstitions to which the Arabic writer had given credence. The fact that they indulged in such beliefs should not, therefore, be allowed to weaken the admiration which every lover of science must feel for the amazing erudition and the marvellous industry of men like Ibn al-Awwām the agronomist and Ibn al-Beithār the botanist, whose writings, taken together, represent no less than a complete encyclopaedia of Spanish-Moorish agriculture and horticulture, and incidentally of all the knowledge the Moslem world had acquired, by the study of ancient sources as well as by practical experience, about the botany of citrus trees, their culture, and the medical and other uses that could be made of their fruits.

¹²⁴ HS, I, pp. 292-293.

¹²⁵ HS, I, p. 648.

¹²⁶ HS, I, p. 295.

¹²⁷ HS, I, p. 300.

¹²⁸ HS, I, p. 301.

CHAPTER VI.

CITRUS FRUITS AND CITRUS TREES DURING THE RENAISSANCE
IN ITALY AND SPAIN.

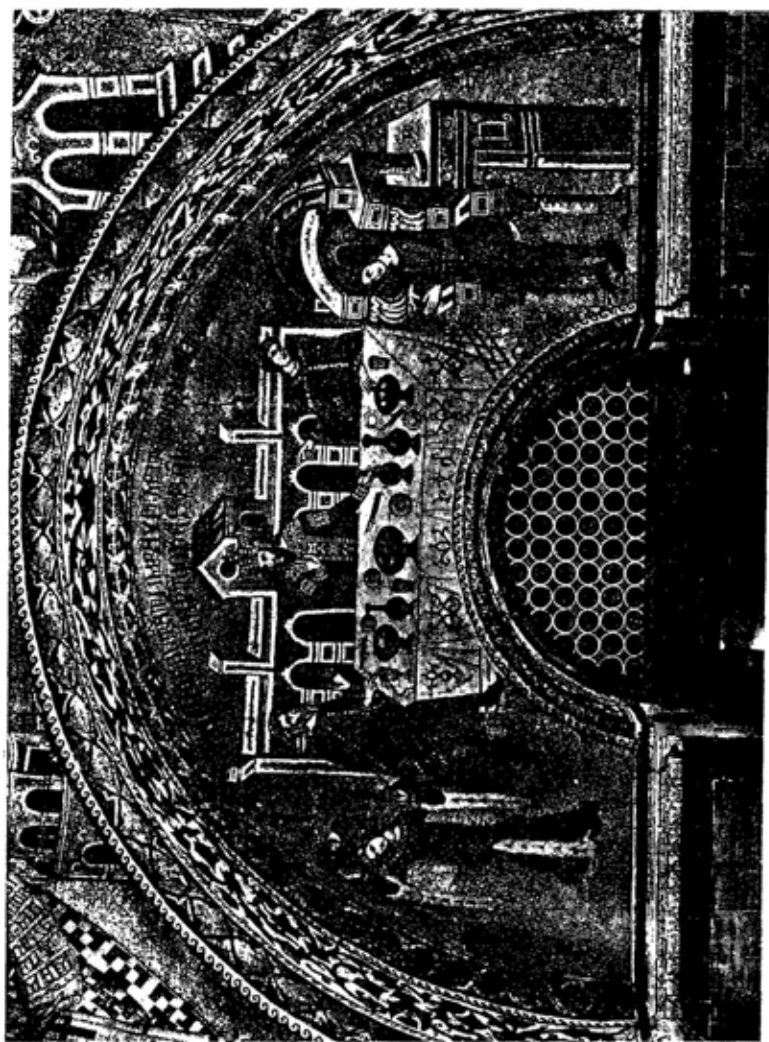
IF Islam was a religion to be taught by the sword as much as by the book, if during the initial period of its military expansion the fanatical ruthlessness of its proselytizing methods left no room for parley nor, *a fortiori*, for peaceful commercial intercourse with Christian nations, it would nevertheless be entirely wrong to assume that there existed a kind of Chinese wall dividing the world of Islam from the world of Rome (Rûm)—including the Eastern and Western empires and extending over the whole of European Christendom—which impeded all contacts and interchanges. The wealthier classes of the population in Latinized Europe, which, even during the troublous times of the barbarian invasions, were kept supplied by Jewish, Greek, Syrian, and even Indian travelling merchants with the costly stuffs, the pearls and precious stones, the scents, and above all the condiments and the spices of the East, were not by any means prepared to forego these products which were not all of them mere luxuries; for just as musk and other strong oriental scents were necessary to overcome the stuffy atmosphere and unsanitary habits of the mediaeval castles,¹ so the spices were essential to give some taste to the salt meats and the salt fish which, owing to the impossibility of keeping fodder for any but the sires and dames, constituted the main winter food of the people in the colder regions of Europe, and the more pungent they were the more they were favoured. The best way to honour one's guests was to serve up the most strongly spiced dishes and the rarest condiments; and amongst the latter few were more expensive and, therefore, considered more valuable than the so-called "acid-fruits"—i.e. citrons, sour oranges, and lemons—the principal use of which in Palestine was, as

¹ IB, pp. 198 and 201.

Jacob de Vitry noticed, for seasoning meat or fish; ² the household accounts of the Kings of England and of France, or of leading members of the royal families, offer valuable information in this respect. Even in citrus-growing Italy oranges and lemons have long been considered suitable presents for high personages. In the records of Savona, a town on the Ligurian coast west of Genoa, it is related that in the year 1468, the city wishing to thank its ambassador at Milan for services rendered, sent him a present of *limonibus confectis et citris*, i.e. of candied lemons and of citrons.³ In Venice, where each year, on Ascension Day, the Doge used to offer a banquet to the *gastaldo* or "little Doge" of the fishermen, it was the custom for the latter to offer the Doge in gratitude for the honour done to their guild, presents of oranges, muscat wine, and straw hats.⁴

The religious iconography of the late Middle Ages and the Renaissance confirm what the written records have already told us, namely that oranges, citrons, and lemons remained, for a surprisingly long time, a luxury fit only for the table of kings and princes. Amongst the Byzantine mosaics of the thirteenth century which decorate the ceiling of the vestibule of the Basilica of St. Mark in Venice, there is one that depicts Pharaoh about to dine off a roast fowl and an orange, whilst in the Baptistry of the same church another mosaic, of the fourteenth century, which represents Salome's Dance, shows on Herod's banqueting table, together with bread and flasks of different wines, a roast fowl and a dish containing three half lemons (Plate XXXVII). In another version of Salome's Dance, or Herod's Banquet as it is more often called, painted in 1364 by an unknown pupil of the Florentine master Orcagna—on the right panel of the pedrella of a triptic representing "The Presentation to the Temple of St. John the Baptist and St. Benedict," now at the R. Galleria Antica e Moderna at Florence—an orange with stem and leaves still attached is laid before the king and each of his two guests (Plate XXXVIII); and in yet another version of the same scene on one of the frescoes with which Fra Filippo Lippi aided by his pupil Fra Diamante decorated, between 1452 and 1468, the interior of the

² PT, p. 176.³ AL, p. 274, footnote.⁴ GP, p. 210.



Cathedral of San Marco, Venice: The Banquet of Herod (Fourteenth Century Mosaic).

Photo : Anderson]



School of Orcagna: The Banquet of Herod. (Dated 1364.)

Photo: Brogi]

(R. Galleria Antica e Moderna, Florence.)

Cathedral of Prato near Florence, wine-cups, pepper and salt, and an orange for each guest, are all that is laid on the table, but four oranges are shown on the small table at which Queen Herodias is dining separately.

Even kings who were kings only for a few hours of merry-making, were granted the privilege of having oranges or lemons on their table. In Flanders there was an ancient custom called the Feast of the Bean-King, which was celebrated annually on the day of Epiphany, when, all the members of the household being assembled at a banquet, there was served a cake in which a bean was hidden, whereupon the one whose share of the cake happened to contain the bean was proclaimed and crowned king for the night. These picturesque revels, at which tradition permitted the Fleming once a year to indulge rather freely in his love of food and drink, of song and noisy conviviality, and of somewhat ribald jokes, were favourite subjects with some of the greatest Flemish and Dutch painters of popular life, who more often than not portrayed their own family at the feast. Jacob Jordaens (1593-1678) of Antwerp painted at least a dozen different versions of the Feast of Beans, and there are several by Jan Steen (1626-1679) of Delft, there being hardly one amongst these pictures without sour oranges (Plate XXXIX) or lemons (Plate XL) on the Bean-King's table.

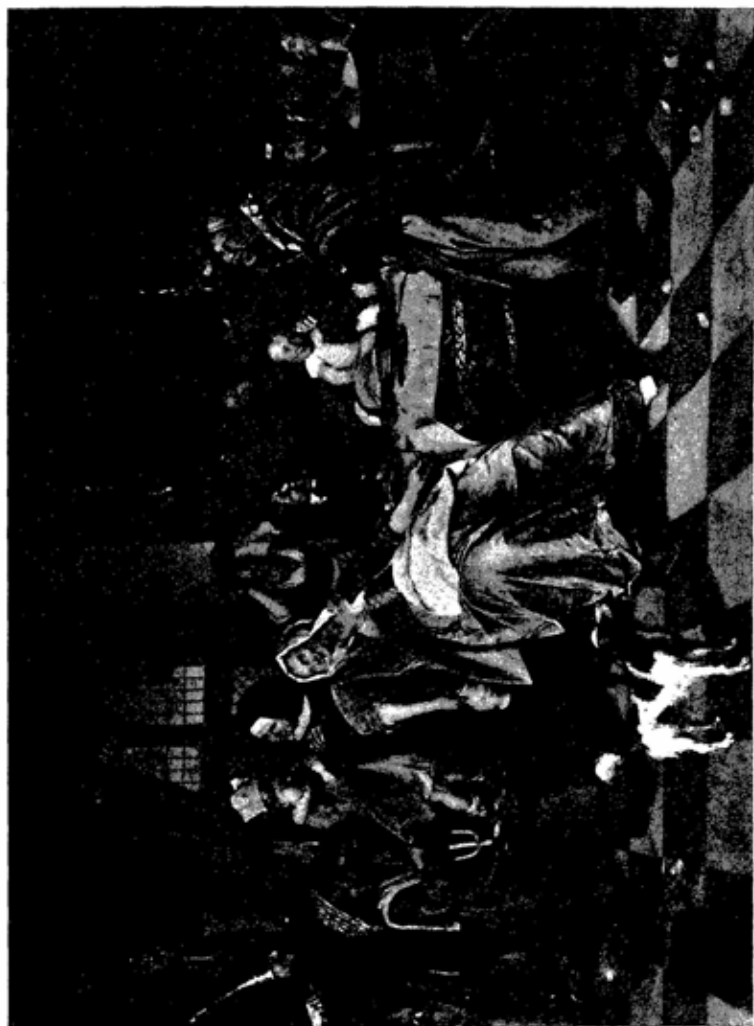
The gods of Greece themselves, as superkings, were not allowed to go without sour oranges and lemons for seasoning their meats, as can be seen on Pierre Courtey's oval dish of Limoges enamel of the year 1500 (in the *Gallerie d'Apollon* of the Louvre Museum, No. 654) illustrating Apuleius' description of the Feast of the Gods at the Marriage of Cupid and Psyche. On a similar dish of the second half of the sixteenth century, signed J. C. (? Jean de Court), at the Victoria and Albert Museum in London (No. C.2442-1910), the Olympians are seen eating pomegranates, grapes, quinces, and oranges, whilst attending fairies carry branches of the orange-tree with fruit and flowers attached.

The popular legends, too, of Europe have preserved reminiscences of the time when citrus fruits were still so rare that royalty alone could afford to have them on its table. In Perrault's collection of old French fairy-tales, written down by him sometime about 1670, the king's

son, who has fallen in love with Cinderella, presents her with oranges and lemons.⁵

But the most striking illustration of the character which attached to oranges and lemons as the fruit of kings is that which is offered us by the religious art of the Renaissance in Italy, where it is difficult to find a "Last Supper"—the meal *par excellence*—without either citrons, or lemons, or oranges. An early fifteenth century "Cena" at the Museum of Seville (No. 296), the work of an anonymous Italian primitif, exhibits an orange cut into halves, as a seasoning for roast lamb. The prayer-book of Margaret of Austria—duchess of Parma and regent of the Netherlands from 1507 to 1530—now one of the treasures of the library of the Escorial, Philip II's sombre palace near Madrid, contains amongst other remarkable miniatures a page representing the Last Supper, wherein several lemons appear together with a dish of roast lamb; the work is Flemish, of the style of Geeraert David, the last great painter of the school of Bruges. On account of the presence in Geeraert's works of certain well defined Italian influences and motifs, it is generally assumed that he must have spent some time in Italy; if the miniatures of Margaret of Austria's prayer-book are really the work of Geeraert David, then the theory of his sojourn in Italy would seem to obtain additional support from his introducing citrus fruits into his representation of the Last Supper, in obvious imitation of the Italian painters of his time. Leonardo da Vinci's masterpiece on the wall of the Refectory of the Dominican convent of Santa Maria delle Grazie in Milan, which he painted between 1495 and 1498, is of course, so badly ruined that it has become impossible to identify with certainty the fruits of round shape which the artist distributed amongst the dishes; but on Raphael Morghen's excellent reproduction made in 1800, when the original was still in a much better state than to-day, lemons and oranges, some of the latter with leaves still attached to the stem, can be easily recognized. Luini's fresco, of 1529, in the church of S. Maria degli Angioli at Lugano, has oranges only; oranges and lemons, served with fish, appear on Titian's large "Santa Cena" of 1567 now in the Hall of the Chapter at the Escorial

⁵ LX, p. 45.



Jan Steen: Bean Feast.

(Gemealdegallerie, Kassel.)

Photo : Hanfstaengl]



Jacob Jordaens: Bean Feast.

Photo : Hanfstaengl]

(Musée des Beaux Arts, Brussels.)

(Plate XLI) ; a plateful of slices of lemon figures, together with meat and several kinds of fish, on Daniele Crespì's "Cenacolo" (c. 1520) at the Brera Museum in Milan. A scene, which it is true has no connection with the Last Supper, but which well brings out the value attached to citrus as the most precious of all fruits, is that depicted on the large frescoes by Giovanni di S. Giovanni (1629), which decorate one of the walls in the refectory of the convent of the Badia at Fiesole, on the hills above Florence; its central panel shows Jesus, about to partake of a meal served by grown-up angels, whilst a child angel makes a great effort to push on to the table—which is higher than the little wight himself—a plate containing a huge lemon.

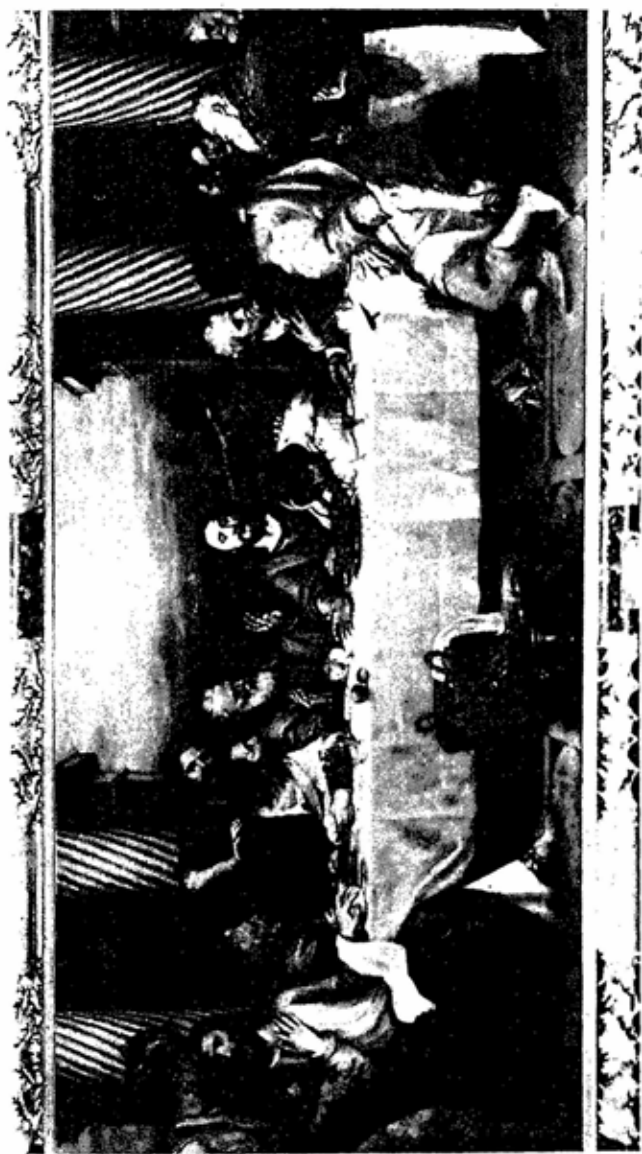
The presence of citrus fruits as an indispensable requisite on the table on which the Last Supper is served appears to have become, with the painters of the Italian Renaissance, a conventional rule to which only few dissenters are found. Curiously enough, even in Portugal and Spain, where oranges and lemons were certainly very common, the rule was faithfully followed. A slice of lemon appears in the "Cena" (No. 246), by an unknown painter of the early Portuguese school, in the Lisbon Museum. Juan de Juanes (1523-1579), of Valencia, has left several versions of the Last Supper, one at the Prado Museum in Madrid (No. 846), another at the cathedral of Valencia, a third one at the church of St. Nicolas also at Valencia, this latter a most beautiful picture of admirable finish and in style strongly reminiscent of Leonardo's picture at Milan; in all three of Juan de Juanes' works oranges are prominently displayed. That this adjunct of an orange, which the casual observer will certainly never suspect having been anything but an entirely unimportant detail in the eyes of the painter, must in reality have been the subject of much thought on his part, is well brought out by the fact that, whilst two sketches which Juan de Juanes made for his great "Cena" of the Prado and which are preserved at the Museum in Valencia have, in the one instance, one whole orange and two halves (No. 612) and in the other, only two half oranges (No. 99), the final picture at the Prado has nothing more than just one thick slice of orange (Plate XLII). Oranges cut in halves appear on two "Last Suppers" in the Provincial Museum at Granada, one by an anonymous artist, the other by the

Carthusian monk Juan Sanchez Cotan. Pablo de Céspedes (1538-1608), the foremost painter of the Cordova school, who studied a long time in Rome and whose pictures show a pronounced Italian influence, introduced several lemons into his "Cena" of the Seville Museum; and his other version of the subject, in the Cathedral at Cordova once the great Mosque of the Ommayads—where a chapel near the *mihrab*, the Moslem prayer-niche, is still known as the *capilla de la Cena* because Céspedes' picture hung there for several centuries—has a whole lemon and a half one as well as a whole orange and a half one.

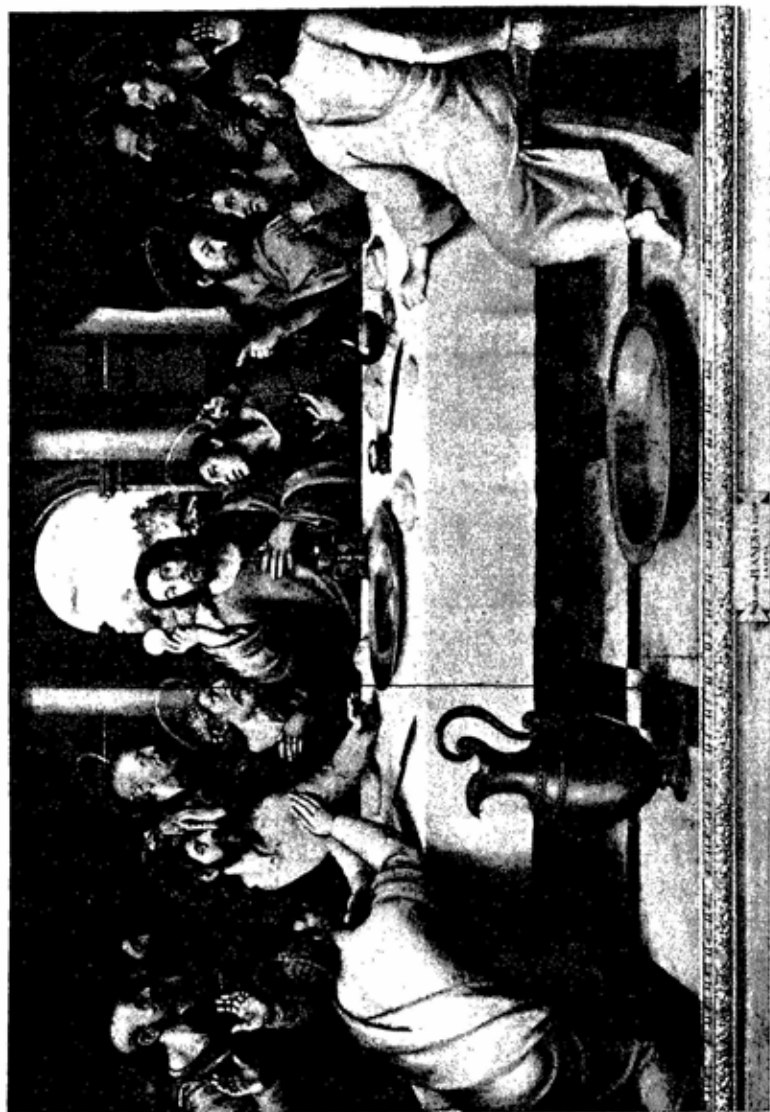
The use of the orange for the seasoning of food started much later than that of the lemon for the same purpose. Ugo Falcando, an Italian monk who spent in Sicily the fifteen years (1154-1169) which it took him to write a history of that island under the Normans, gave, in a letter (*Epistola ad Petrum Panormitanum*) appended to his History proper, a description of the beauties of Sicily and in particular of her trees: "One sees there . . . citrons . . . lemons (*lumias*) whose acidity fits them for seasoning food, and oranges (*arengias*) which, although full of acid juice, are more apt to please the eye on account of their beauty than to be put to any other use."⁶ Obviously, towards the middle of the twelfth century oranges were not yet used with food, even in Sicily where their culture was well established. It is probably in Palestine that the crusaders, pilgrims, and merchants first learned to use the orange for seasoning meat, fish, and salads.

For pepper and cloves and other similar spices grown only in tropical countries it was obvious that Europe would always have to rely on imports from beyond Egypt and the Red Sea; oranges and lemons, however, were grown in all the Mediterranean countries which were then, or, like Sicily and southern Italy, had been, at some time or other, under Moslem rule. It was therefore only natural that the high prices that were being paid for oranges and lemons in northern countries should call forth a demand for information about the nature of the trees that produced these precious fruits, the manner of cultivating them, the medical or other uses that could be made of

⁶ FT, p. 185.



Titian, the Last Supper (Escorial).
Photo : J. Ruiz Vernacci]



Juan de Juanes (1523-1579): The Last Supper. Prado, Madrid.

their different parts; and in the measure, as such information became available to the general public, the culture of citrus trees spread gradually northwards.

In the beginning, of course, this northward spread was slow. Blondus Flavius, towards the middle of the thirteenth century, still speaks of the orange-trees near Amalfi in the Gulf of Naples as of a newly-introduced plant which did not yet have a name in the scientific language of the day: *Amalphi regio est omnium Italiae amoenissima, cedri, malique quod arantium vocitamus ferax*,⁷ (i.e. the region of Amalfi is the most pleasant of all Italy; it produces in great abundance citrons, and apples which we call oranges). In the small garden of the convent of St. Sabina, on the Aventine in Rome, there stands a sour orange-tree (Plate XLIII) about six metres high which was already mentioned by Ferrarius (1646)⁸ and even by Gallo (1550)⁹ as having been planted there by St. Dominic himself, the founder of the Dominican Order, who died in 1221. The fruit, of which the tree produces now only a small quantity, was believed to possess curative properties due to its saintly origin, and it was the custom to offer rosaries made of small oranges from St. Dominic's tree to Popes and cardinals on the occasion of their traditional yearly visit to the convent.¹⁰ To this day, the monks of St. Sabina distribute the fruit, and even leaves, to pilgrims. A prominent member of the Dominican order has told the author that a new branch is said to have sprung from the old trunk in the year in which Lacordaire re-established the Dominican order in France (1841). I have carefully examined the tree and, while it is obvious that the present trunk is not the original one, the root is undoubtedly of great age, and, in view of the extraordinary care with which the monks look after it, I do not consider it altogether an impossibility that the root should be the actual survival of a tree originally planted in St. Dominic's time.

⁷ *Blond. Flav. Ital. Illustr.* p. 420, according to AL, p. 270.

⁸ AJ, Book IV, Ch. i (p. 372).

⁹ "Alcuni frati di San Domenico mi hanno certificato che in Roma nel convento loro de santa Sabina vi e un arancio, il qual fu piantato dalle benedette mane de san Domenico, & che tuttavia floridamento produce frutti delicatissimi (GE, p. 153. GE₂).

¹⁰ AL, p. 275. IO, p. 243. FF, p. 233.

Curiously enough, it was a Dominican who, first among Christian writers, gave a correct description of the orange. Albertus Magnus (1193-1280), Count of Bollstädt in Swabia (South Germany), an early member of the Dominican Order, had studied at the University of Pavia in Lombardy and was the author *inter alia* of the first really scientific treatise of natural history since Aristotle and Theophrastus. "Orange (*arangus*)—so he wrote in or about 1256— . . . is how some call the citron of the Italians (*cedrus Italarum*); but the *arangus* has an apple that is short and round, its flesh is soft, its seeds are somewhat harder than those of the citron, and the trunk of the tree is thicker and higher and less sensitive to cold."¹¹ Albertus' writings were extensively drawn upon by Piero de' Crescenzi of Bologna, senator, lawyer, and author of a celebrated Treatise on Agriculture (c. 1305); although this book is mainly composed of extracts from the Greeks, the Latins, and at least one Arabic-speaking Jew, namely Ishaq el-Israëli, and although it reproduces in a most uncritical manner a number of instructions for the realisation of the fanciful plant-unions dear to the ancients, yet on the whole, the quotations have been chosen with a discrimination not usually found in the writings of Crescenzi's contemporaries. It contains several very interesting chapters on the art of laying out gardens of small and medium sizes such as will meet the requirements of people of the middle classes, and parks "suitable for kings and other noble and wealthy persons." His fifth book, which treats of the trees grown for utility purposes, contains a chapter on the citron describing in detail the cultural methods advocated by Palladius, in particular the precautions to be taken in order to guard citron-trees from damage by frost in winter, and some of the uses that can be made of the fruit.¹² Crescenzi's treatise, which was translated into several European languages, remained for nearly three centuries the principal text-book to which agriculturists and horticulturists, not only of Italy but also of countries farther north, turned for inspiration and instruction. Directly, as well as through the works of later writers who borrowed from it, Crescenzi's treatise

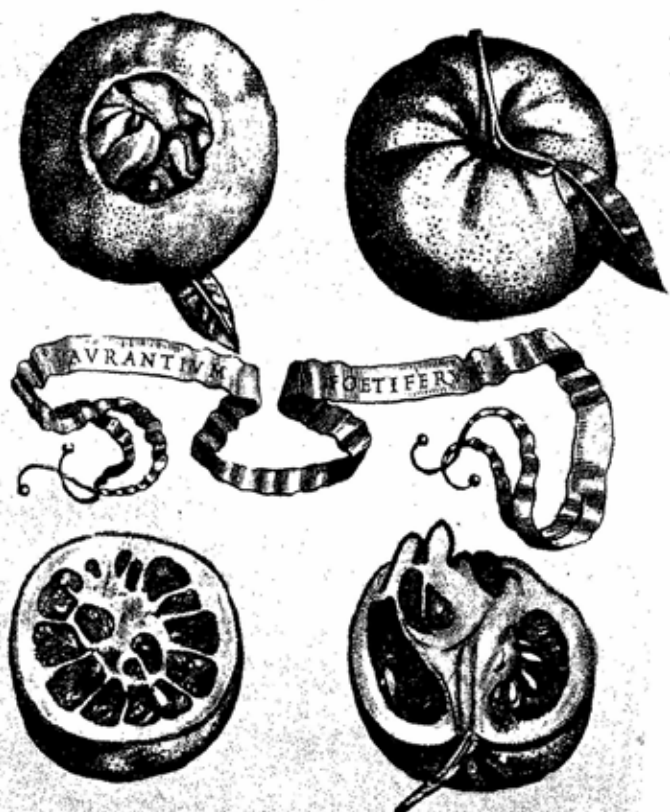
¹¹ BT, Book VI, tract I, Ch. xi §§ 54-55.

¹² EN, Book V, Ch. viii (pp. 221-223).



Sour Orange Tree said to have been Planted by St. Dominic (c. A.D. 1200).
Convent of St. Sabine, Rome.

Photo : Anderson]



Navel Orange.
(From Ferrarius' Hesperides, 1646.)

has had a very marked influence in encouraging the spread of citriculture in central and northern Italy. All that the Florentine Luigi Alamanni in his didactic poem "La Coltivazione" (1546),¹³ and much of what the Siennese Jesuit priest, J. B. Ferrarius, wrote about citricultural technique, is clearly derived from Piero de' Crescenzi, though Ferrarius has also added much that is apparently the result of his own prolonged experience in growing citrus fruits. His book, published in Rome in 1646, and entitled "*Hesperides, sive De Malorum aureorum Cultura et Usus Libri Quator*" (Hesperides, or Four Books on the Culture and Use of the Golden Apples) is a compendium of all the citricultural knowledge of his time, including even all that was then known about the history, real or legendary, of the golden fruits.

When—so Ferrarius relates—as a result of the Barbarian invasions the beauty and the amenities of the African countryside had been completely destroyed, the three Hesperides, daughters of Hesperus, in order to save themselves and to assure the survival of the trees which bore the golden fruit, took secretly to flight; carrying a few of the hesperidean apples with them, they crossed the seas in a large shell and, aided by friendly tritons, were driven ashore on the smiling coast of Italy, that jewel of the world, where they disembarked whilst the two winds showered flowers over them. They now divided Italy between them, each of the sisters choosing for herself one of the three sections: Aegle with her citrons took the country round Saló on Lake Garda, Arethusa took Liguria for her lemons, and Hesperthusia kept the Campania Felix where she sowed the seeds of her orange apples. Now and then, they would exchange fruits between them; together, they furnished trees to Rome, the home of all beauty.¹⁴ In accordance with this imaginary original scheme of geographical distribution, Ferrari's treatise is divided into four books: Book I is devoted to the legend of the Hesperides and to the history of citriculture generally; Book II, entitled "Aegle," deals with the Citron; Book III—"Arethusa"—treats of the Lemon; and Book IV—"Hesperthusia"—is on oranges, sour and sweet. The five

¹³ BQ, Book V, verses 673-778 (pp. 186 ff.).

¹⁴ AJ, Book I, Ch. x (pp. 48-50).

hundred pages of this remarkable work are, in spite of a great wealth of details, pleasant to read; even the descriptions of over a hundred varieties are all imbued with that peculiar charm attaching to every book that has been a labour of love to its author. If in regard to the technique of citriculture Ferrari teaches us very little that was not already known to his predecessors and in particular to Piero de' Crescenzi, he tells us a world of things about the thousand and one uses to which the gastronomists, the physicians, and the beauty-specialists of seventeenth-century Italy knew to put practically every part of the fruit, the blossom, and the leaves of all possible varieties of citrus trees. Yet the most valuable part of the "Hesperides" is perhaps the admirable series of woodcuts illustrating all the essential botanical features of most citrus varieties known at the time, and the elaborate descriptions appended to these illustrations. Through them we learn, *inter alia*, that both the grapefruit and the navel-orange—both of them usually considered to be modern introductions—were already known in Ferrari's days. Under the name of *Aurantium maximum* he describes two very distinct varieties: the one of spherical shape and non-edible pulp, corresponding to what we would to-day call a shaddock or a pomelo, the other, of slightly depressed form and containing a pulp which is pleasant to eat, and which appears to be identical with our present-day grapefruit. These fruits, writes Ferrari, were first cultivated in the region of Genoa, whence the trees were imported to other parts of Italy.¹⁵ As to navel oranges, one of these appears in Ferrari's description and illustration¹⁶ (Plate XLIV) of the fruit which he calls *Aurantium foemina, sive foetiferum*: "This orange imitates to some extent the fertility of the tree which bears it in that it struggles, though unsuccessfully, to produce the fruit upon itself . . . On the end of the fruit is another, sometimes with a thin rind investing it, but more frequently naked, so far at least as the pulp is concerned; this [second fruit] is composed of an inner medulla of about four spikes; the young brood, as it were, of fruits partly emerging through the gaping navel." In modern terminology we say that navel

¹⁵ AJ, Book IV, Ch. xvii (pp. 437-441).

¹⁶ AJ, Book IV, Ch. viii (pp. 403-405).

oranges are characterized by the presence, on the apex of of the fruit, of an umbilical mark due to the production of an incipient second whorl of carpels.

A few years after the appearance of Crescenzi's Treatise on Agriculture, Matteo Silvatico (c. 1277-1342), a physician born in Mantua but residing at Salerno—very probably as a professor of medicine in the ancient university of that town—composed a Dictionary of Medicine which contains several thousand names of drugs arranged in alphabetical order with their synonyms in Latin and other languages, and, in the case of a few selected drugs, also with a full description of the dietetic and therapeutic properties and the use that was made of them in medicine. This work is still to-day of great value for the identification of mediaeval names of vegetables or other drugs. "The citrine apples (*poma citrina*)—wrote Silvatico in 1317—are four in number; the first is the citron (*citrus*), the second the orange (*citrangulum*), the third the lemon (*limon*), and the fourth the fruit commonly called *lima* (probably the shaddock, as Gallesio has suggested).¹⁷ These four species are well-known, particularly in Liguria. The lemon is a well-known fruit, beautiful, of pleasant smell, and full of a juice that is as sour as that of the orange, but its shape is more oblong; it is very good for seasoning food, just as are its flowers, of which strongly scented waters are made, that are useful for beautifying purposes . . . Our women in Nice and in Piedmont use a mixture of lemon juice and oil as a vermifuge for children . . . [The juice is also] extremely useful as a preventive remedy against pestilential fevers.¹⁸ Two hundred years later (1508), the Venetian Doctor of Medicine Michele Savonarola, in his "Booklet on all Things that are commonly and more than commonly eaten, and on those that are drunk," has little more to say on the dietetical and medical value of citrons, oranges, and lemons,¹⁹ than what is to be found already in Matteo Sylvatico.

The belief in the virtues of citrus fruits as a preventive remedy against the plague and similar epidemic diseases was as widespread as it appears to have been unshakeable. Marsilio Ficino (1433-1499), the philosopher and writer, and head of Cosimo de Medici's Neo-Platonic Academy in

¹⁷ AL, p. 339.

¹⁸ KF, Ch. ccciv.

¹⁹ NJ, pp. 12 and 13.

Florence, in a short treatise on the methods of guarding oneself from being attacked by the plague, published in 1481, recommended "carrying in one's hand, for the purpose of smelling them, the most odoriferous apples: citrons, lemons, oranges, etc."²⁰ Nicola Massa of Venice (1556) advises his readers to "chew citron or lemon seeds";²¹ Domenico Romoli, also of Venice (1570), expressed the view that "to smell lemons, citrons, or oranges in times of plague is a healthy thing."²² The Siennese physician and botanist Pierandrea Mattioli—or Petrus Andreas Matthiolus as he calls himself in his Latin works—had written in 1544, in his Commentary on Dioscorides: "Orange-flower water is not only preferred over all other perfumes, but made up into medicaments it is very useful against fevers . . . The lemon-juice water which is made in glass alembics on the water-bath, in addition to being good for the complexion of the ladies, also removes all spots and excoriations of the skin that occur on the body, as also all pustules of chicken-pox, and it destroys warts in whichever part of the body they may occur."²³ But Mattioli's fate does not seem to justify his own and other Italian writers' faith in the virtues of orange-flower water or of distilled lemon juice as a preventive against infection from pestilential fevers, for he himself died a victim of the plague which visited Italy in 1571. Francesco Redi, writing in 1671, adds to the many and already well-known virtues of lemon juice that of having the power of purifying muddy water.²⁴ Twenty years later, Giuseppe Lanzoni published at Ferrara his *Citrologia sev' Curiosa Citri Descriptio*, a treatise entirely devoted to the dietetic and medical properties of citrus fruits and to the multiple uses that can be made of them, particularly in cases of diseases of the head, the chest, or the abdomen, of women's and children's diseases, or of general feverish conditions.²⁵

It is in the writings of the Italian horticulturists and physicians of the sixteenth century that we first meet with the term *agrumi*, which is to-day the common name for the genus *Citrus* in the Italian vernacular; *agrumi*—from

²⁰ FV, Ch. v.²³ KG, p. 116.²¹ KE, pp. 26-27.²⁴ MN, p. 35.²² MZ, p. 318.²⁵ AT.

agro, sour—is no more than the literal translation of *hamidhât*, the term given to citrus fruits generally by the Arabs in Egypt (see p. 143).

In the citrus-growing centres of Italy, citrus fruits have, since the Middle Ages, played an important part in popular rejoicings. Thus at Reggio di Calabria there were held each winter public games in the form of regular battles between two contending armies, using oranges, lemons, and citrons as their sole ammunition. One of the "armies" was composed of the young men of the upper part of the town, the other of those of the lower town; and the object of the fight, which took place in the public square situated half way between the upper and the lower towns, was for each side to drive their opponents from the field and back into their respective section of the city. "As soon as the young men go forward into this battle, a mixed crowd of both patricians and plebeians assembles to enjoy the spectacle; each onlooker endeavours to help the champions of his own party by signs and by shouts, and as soon as one of the two fronts shows signs of giving way, the public on both sides comes to the rescue and lends a helping hand until the issue is definitely decided and the vanquished army driven from the field. Occasionally, if it happens that in the heat of battle the combatants forget that they are engaged in a game only and not in a real contest, the women installed in the windows of the surrounding houses will endeavour to calm the belligerents' ardour by pouring water down upon them; but such efforts are of no avail, and the apples, which taste very bitter not only to the palate but also to all parts of the body, go on flying about like giant hailstones driven by the storm, so that soon the bruised faces begin to resemble the round shape of the citron."²⁰ But the game was nevertheless one between friends, and, once the battle finished, relations between the citizens became again as friendly as they were before.

However, in Treviso, a city in the territory of the Republic of Venice, a somewhat similar game once became the cause of a real battle. In the centre of the town the people had built a small castle decorated and furnished in the most luxurious manner. On the days appointed for

²⁰ AJ, Book II, Ch. iii (p. 70).

the games, the castle was placed in charge of a garrison composed of the prettiest girls of the town, wearing flowers in their hair and necklaces of diamonds and other precious stones, but, as the chronicler reports, "their most effective weapon was no doubt their unarmed comeliness which easily conquered their opponents' hearts"; the young men of the town forming the besieging army encamped around the castle. The only ammunition which either side was allowed to use were oranges and "Adam's apples" (= shaddocks), also roses, lilies, and other such sweet-scented or delicately-coloured flowers; pipes and flutes provided the "warlike" music designed to fan the martial ardour of assailants and defenders alike. Attracted by the fame of the unusual display, thousands of guests from all over Italy but especially from the neighbouring towns of Padua and Venice, had assembled in Treviso on the occasion of one of such sieges of the *Castello* when, the attack of the fortress being pressed with enthusiasm but in the sportive spirit enjoined by tradition, suddenly a group of Venetian youths from amongst the public forced its way through the lines of the besieging party, seized the gate of the fortress, and raised the flag of their republic in an attempt to carry the place in good earnest. When the onlookers realized the hostile intentions of the Venetians, a few young men from Padua rushed to the rescue of the fair garrison and, recalling an ancient feud between their city and Venice, fell upon the Venetian standard-bearer, seized the flag of St. Mark, and tore it to pieces. Thereupon the square in front of the castle became the scene of a real battle, and the end would have been serious bloodshed had not the municipal authorities called in their own forces to separate the belligerents, at the same time decreeing the immediate and final cessation of the games. Thus ended this singular incident which Ferrarius calls a *bellum è malis citreis*, a war on account of citrus apples.²⁷

To this very day an orange battle is waged, each year, in the Italian city of Ivrea. It is said that some time in the Middle Ages the peasants of the district having won a victory over their feudal lord, cut off his head and burned his castle; and that it is in commemoration of that event

²⁷ AJ, Book II, Ch. iii (p. 70).

that, once every year, they celebrate an orange battle, with fruit imported from Sicily for the purpose.²⁸

But citrus fruits were not, in games, used as missiles of attack only; the "throwing of golden apples" was tantamount to a message offering or inviting love, and as such it was part and parcel of the mediaeval language of flirtation. During the twelfth and thirteenth centuries it was the custom, in the cities of Tuscany, for a number of the *jeunesse dorée* to organise themselves into clubs for purposes of amusement and for the preparation of public festivities. Of such a club, or *brigata*, formed at Siena in the latter half of the thirteenth century, the poet Folgore da San Gemignano was a member, who in a series of fourteen sonnets—one for each month of the year, and one each as prologue and epilogue—described the different entertainments and games in which he and his friends delighted. In May, it seems, their favourite pastime was racing gaily caparisoned horses, amidst waving of flags and flowers,

and the breaking and smashing of spears and lances,
and the raining down from windows and balconies
of garlands of flowers, and of oranges;
and little girls, and maids, and youths
kissing each other on lips and on cheeks,
and arguing only about love and pleasure.²⁹

The Italians made a lavish use of scents made from citrus blossoms. During the eleventh and twelfth centuries the Normans had, in addition to Sicily itself, conquered the whole southern half of the Italian Peninsula as far north as Capua, within less than a hundred miles from Rome, and under Norman rule the bays of Naples and Sorrento had become, next to the Riviera around Genoa,

²⁸ In July 1932, the newspapers reported that, in the course of a strike by high-school students at Tucuman (Argentina), the firemen having been called out and ordered to turn water on the riotous crowds but the water supply having failed, the students gathered oranges from the trees along the streets and bombarded the firemen, who were forced to resort to the same ammunition: the reports add that during this orange battle the provincial Minister of the Interior was struck in the eye. (AE, 1932, VIII, p. 390).

²⁹ G.Q. p. 302.—In ancient Greece the throwing of an apple was taken as a declaration of love.

Italy's greatest centre of citriculture. From the Norman Court of Palermo the Neapolitan aristocracy inherited the love of everything oriental, and from Naples—which during the fourteenth century was the teacher of elegant fashion to all Italy as Paris is to-day to half the world—the use of orange-blossom perfume spread all over Europe. Boccaccio (1313-1375), in one of his novels, describes at Naples, in the house of a Sicilian harlot, "her own chamber, which was perfumed with roses, orange-flowers, and other costly scents."³⁰ In another tale he narrates the adventures at Palermo, in Sicily, of a Florentine youth as the guest of a wealthy courtesan who poses as a lady of society: "After [supper], they took out of the hamper silver canisters of rose, orange, and jessamine water, which they sprinkled upon the bed . . . [and] after they had lain a convenient time, the servants returned, and put on their clothes; and when they had taken some more refreshment of wine and sweetmeats, and washed their hands and faces with orange-water . . ." ³¹ And in yet another novel, Isabella, whose lover has been put to death by her brothers, "cut off his head, . . . put it into a flower-pot, having folded it in a fine napkin, and covering it with earth, she planted sweet herbs therein, which she watered with nothing but rose and orange water, or else with her tears."³²

The novelist Straparola (c. 1550)—in a story about three highly virtuous ladies of Bologna who, being pursued by an enterprising student, pretended to be listening to his overtures and in turn invited him secretly to their houses, only to make fun of him in the most cruel manner—describes the boudoir of one of the ladies "where she kept her orange-waters and other pleasant scents," and refers to the habit of perfuming one's body with orange-water.³³ Pietro Aretino (1492-1557), the licentious satirist, describes in his book "The Life of the Nuns" the use of orange-blossoms in the decoration of the dinner-table;³⁴ and the Frenchman Rabelais, the author of the heroi-comic novel "Pantagruel," writes, in the course of a description of a

³⁰ CZ, 2nd Day, Novel V.

³¹ CZ, 8th Day, Novel X.

³² CZ, 4th Day, Novel V.

³³ OJ, *Notte Seconda, Favola II*, fol. 53r. and 54v.

³⁴ CH, Part I, First Day (pp. 62-63).

banquet at which he was present in Rome in 1549, that "the tablecloths being removed, to enable the guests to wash their hands, there were placed on the table two artful fountains, . . . from the lower part of which there issued, by several channels, myrtle water, orange-blossom water, and rose water."³⁵

Lemonades—refreshing drinks of which the principal constituents are lemon juice and sugar—did not become popular in Italy until the fourteenth century; the writings of Italian rabbis quite definitely establish this fact. Questioned as to whether on the Sabbath—when all physical exertion capable of being construed as "work" is severely forbidden—Jews were permitted to squeeze the juice out of lemons, Rabbi Zedekiah ben Abraham of Rome (c. 1230) replied disapproving of the practice, but his cousin Rabbi Judah ben Benjamin of Viterbo dissented and gave permission to prepare lemon juice even on the Sabbath "because it is known that the object is not the preparation of a drink, but merely the seasoning of food"; similarly, Rabbi Asher ben Yechiel, who lived in Germany, France, and Spain (1250-1328), ruled that the lemon was to be counted amongst the fruits of which the juice may be extracted on the Sabbath "for this is never done for preparing a beverage, but only for obtaining a seasoning for food."³⁶ Yet, when the use of lemon juice as a drink, with water and sugar, came into vogue, pressure on the part of the Jewish public compelled the religious authorities to sanction the extraction of the juice on the Sabbath even for that purpose: Rabbi Joseph Karo (1488-1575), of Safed in northern Palestine, wrote that in Egypt it was customary to refresh oneself on the Sabbath by drinking lemon-juice water with sugar and that it had occurred to no one to raise any objections to this habit; and his contemporary the great Rabbi Mordechai Jaffe, of Prague, gave a similar ruling.³⁷

Lemon juice must have been an important article of trade. Fynes Moryson, the English traveller and writer of the early seventeenth century, reports that he went from Candia (Crete) to Constantinople on "a little Greeke Barke loaded with Muskedines, and with tunnes (barrels) of

³⁵ MJ, Vol. II, p. 370. ³⁶ JT, III, p. 315. ³⁷ JT, III, p. 315.

Lemons Juyce (which the Turks drink like Nectar), and with Onions."³⁸

Of the many artful manners in which the Italians knew to make use of citrus fruits in the preparation of food, only the cookery books of the sixteenth century begin to give us detailed information in writing; but it is obvious that many of the dishes therein described had been invented long before. Amongst the dainties served at a Christmas supper in Venice in 1546 mention is made of "a plate of stuffed oranges" and "four small plates of fillets of herring with orange juice";³⁹ and the *entremets* on the menu of another Christmas banquet of about the same time comprises candied orange blossoms, candied citrons and oranges,⁴⁰ and sweet oranges strewn with powdered sugar.⁴¹ At a dinner given at Ferrara on January 23, 1529 by Ercole d'Este to his father the Duke of Ferrara, to the Marchesa of Mantua, to his wife Renée, and to the foreign Ambassadors accredited to his Court, fried trouts were served with slices of lemons, roast pheasants with "split" oranges and with a mixed salad containing slices of citrons, whilst the dessert was composed of fresh grapes (in January!), Spanish olives, jellies, pears, Parmesan cheese, oranges, candied citrons, and "citrons covered with sugar."⁴² A few months later the Archbishop of Milan, Ippolito d'Este—so we are told by his *chef* Christopher of Messisbugo who published in 1549 a book in which he immortalized his most successful culinary inventions—gave, also at Ferrara, a dinner to his brother Ercole, the latter's wife Renée, Francesco d'Este, and about fifty other ladies and gentlemen; and the following are a few out of the several hundred dishes of which the sixteen courses, not counting sweets and fruit, were made up: salad of herbs and of citron cut into initials of the guests' names and into their various coats-of-arms, caviare fried together with oranges covered with sugar and cinnamon, brills *marinés* covered with slices of lemon,

³⁸ KU, p. 253 (Part I, Book III, Ch. 3).

³⁹ MZ, p. 126.

⁴⁰ According to EF, II, p. 95, a present of five gilded candied oranges was sent to Pope Gregory XI at Avignon by St. Catherine of Siena as early as A.D. 1375; I have not been able to find any confirmation of this statement in St. Catherine's Letters.

⁴¹ MZ, p. 127.

⁴² KL, pp. 4b-8.

fried sardines with oranges, *luzzi* (a fish) *au vin blanc à la flamande* with citrons cut into very thin slices, oysters (a thousand of them) with oranges and pepper, salad of lobster-tails and citrons, sturgeon *en gelée à l'allemande* with orange juice, sparrows fried with oranges, orange fritters with sugar and cinnamon, *omelette soufflée* with raisins studded with pine-kernels and served with orange juice and sugar, fried oysters (five hundred of them) with lemon slices, candied citron and orange peels; the finger bowls were filled with scented water, and each of the guests was provided with two perfumed toothpicks.⁴³

Following the teachings of the *gourmets* of ancient Rome, the Italians of the Renaissance used citrus fruits for scenting their wine: "How much taste—writes Tanara of Bologna in 1651—a drop of orange oil will convey to a glass of wine even when nothing else is done than rubbing a piece of orange-peel along the goblet's rim, is something of which anyone can easily convince himself; some people even maintain that it suffices to spray a little of this oil upon the outside of the glass in which the wine is contained, alleging that the subtlety of the oil is so great that it will pass through the glass and cause the wine to become scented."⁴⁴ That this belief in the extraordinary "subtlety" of orange-peel oil was current not only in Italy but also in other countries may be seen from a passage in the diary of the French traveller M. de Monconys where he relates how, being at La Rochelle in October 1645, he, together with one of his friends, a physician, carried out some experiments which clearly proved that "the juice of an orange does not pierce glass, contrarily to the common erroneous view."⁴⁵

I have suggested before that the Cedernelli (=little citrons, from *cederno*, citron),⁴⁶ a Florentine family who carried three small citrons in their coat-of-arms, may not improbably owe their family-name to their having been in some way connected with the trade in citrons and other citrus fruit (see p. 110). I believe that the Medici also owe their name to some such association, for the five red balls, or *palle*, which they carry in their escutcheon are not "apothecaries' pills"—as the wits of Paris pretended in

⁴³ KL, pp. 0-4a.

⁴⁵ KS, Vol. I, p. 34.

⁴⁴ OT, p. 337.

⁴⁶ LM, p. 199.

order to deride the bourgeois origin of Henry II's queen, Catherine de Medici⁴⁷—nor are they meant to recall the blood-stained balls of the mace with which, as the Medici themselves maintained, an imaginary ancestor killed the giant Moor Mugel who was on the point of stunning Charlemagne in battle.⁴⁸ The name Mugel seems to me to be no more than a reminiscence of the valley of Mugello in Tuscany, where the Medici family had originally come from. They were prominent bankers and Levant merchants, registered members of the merchants', and not of the doctors', guild; in fact, as far as their records can be traced back, they had no connection at all with the medical profession.⁴⁹ That, in the sixteenth century, the Medici themselves still admitted the existence of some sort of connection between the name of the family and Media—the original home, as it was then believed, of citrus fruits—is evident from a passage in the sermon pronounced by Renaud de Beaune, Archbishop of Bourges, at the funeral of Catherine de Medici in 1589, where he says that the name of *Medicus* was given to one Felsinus, an ancestor of the departed queen and the founder of the city of Florence, in commemoration of legendary conquests in Asia and particularly in Media, "just as we read of Paulus who was called *Macedonicus* for having conquered Macedonia from Perseus, and Scipio, who was named *Africanus* for having done the same in regard to Africa. . . . I do not know," adds Brantôme in relating this passage from the Archbishop's speech, "whence the said M. de Beaune has got this story; but it stands to reason that, in the presence of the king and of an assembly such as was present there for the queen's funeral, he would not have advanced it without good authority."⁵⁰ On the other hand, as Gallesio already observed long ago,⁵¹ *Medici* was one of the names applied to oranges in mediaeval and Renaissance Italy. Merula, describing in 1605 the trees grown in the region of Rapallo, enumerates *passimque Citrus, Medicis, Limonibus, Oleis* . . .,⁵² that is, "here and there citrons, oranges, lemons, olives." Similarly Judocus Hondius mentions in 1626 in the valley of Rapallo

⁴⁷ QJ, I, 20, footnote 1, PB.

⁴⁹ QJ, I, 20, footnote 1.

⁵¹ AL, pp. 258-259 (footnote).

⁴⁸ GY, p. 241.

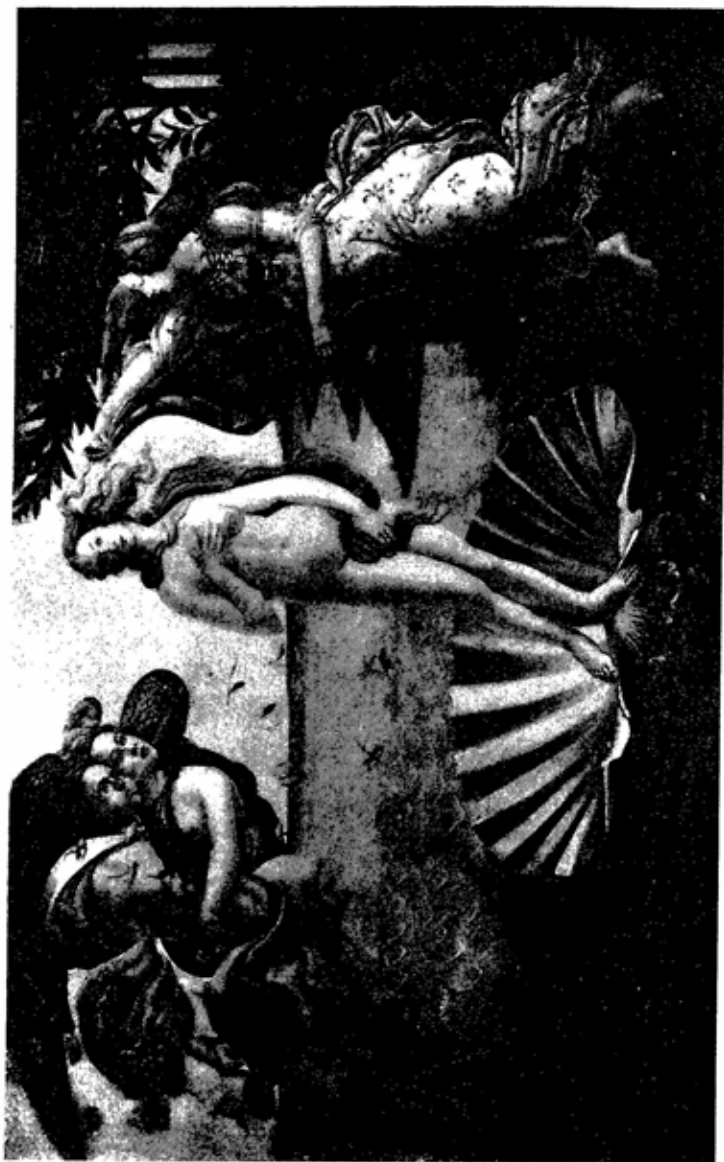
⁵⁰ DF, Vol. VII, p. 334.

⁵² KK, Part II, lib. iv, p. 696.



Botticelli: The Spring (Florence, Uffizi).

Photo: G. Brogi]



Botticelli: The Birth of Venus (Florence, Uffizi).
Photo: Hanfstaengel



The Arms of the Medici, Surrounded by Citron Branches with Blossoms and Ripe Fruit.

(From the Decorations of the Ceilings at the *Palazzo-Pitti*, Florence.)



Jewel Casket of the *Camera degli Argenti*, at the *Palazzo degli Uffizi*,
Florence.

citris passim, medicis, limonibus, and speaking of the plain of San Remo he writes "*Planiciem quaedam inter oppidum et mare interjacet, non usque adeo ampla, tota citreis, medicis, limonibusque consita.*"⁵³ It has already been mentioned that an unknown commentator—either late Hellenistic or Byzantine—of the works of Nicander of Colophon, a Greek poet and physician of the second century B.C., wrote, in a note to that author's *Alexipharmaca*, that "the *medikon melon* (Median apple) is the *nerantzion*";⁵⁴ *nerantzion* was the Byzantine—and still is the modern Greek—name for the sour orange. And so the mysterious *palle* in the escutcheon of Florence's most brilliant dynasty of rulers are probably nothing else but oranges, just plain oranges. Orange-trees, in fact, have always been the favourite trees of the Medici. Painters and poets who celebrated members of "la Medica famiglia"⁵⁵ laid their scenes amidst orange groves, as witness Poliziano's poem "La Giostra"⁵⁶ as well as Botticelli's two most famous pictures, painted for the Villa del Castello, the Florentine home of the Medici:⁵⁷ the "Spring"—which shows Giuliano de Medici (c. 1486) in the character of Mercury, the god of Commerce, grasping a staff with which he is engaged in knocking oranges from their trees (Plate XLV)—and the so-called "Birth of Venus" (Plate XLVI), in which the Goddess of Love, born from the sea and riding a giant shell, is seen being driven by friendly winds towards a forest of orange-trees covering the shore at Porto-Venere on the Ligurian coast. Under the traits of Venus, Botticelli has here represented the beautiful Simonetta dei Cattanei, the celebrated object of Giulio de Medici's platonic love. Simonetta was born at Porto Venere, and Porto Venere was the place where according to a Renaissance legend—preserved in the poems of the Italian humanist writer Jovianus Pontanus⁵⁸—Venus landed when she first brought the orange-tree to Italy "from the rich groves of the Medes and of Africa." It was a Medici, the Grand Duke Francesco I (1574-1587),

⁵³ HN, p. 73. ⁵⁴ See p. 103. ⁵⁵ ME, Book II, Stanza iii, v. 2.

⁵⁶ ME, Book I, Stanza xxxii ff., lxviii ff., and xcix-ci.

⁵⁷ Now called Villa di Petraia; it also owned a fine orange-garden which has been described by Vasari and by Montaigne (KT, p. 194).

⁵⁸ BA, Book I, verses 168-177.

who brought together, at Florence, a collection of all the citrus varieties that could be obtained at the time in Italy or abroad.⁵⁹ Oranges, citrons (Plate XLVII), and lemons occupy a foremost place in the painted ceilings of the Palazzo Pitti, that huge palace of the Medici in Florence. One of the most striking pieces in the collection of ancient jewellery at the Uffizi Galleries in Florence is an eighteenth century jewel casket of gold with inset, late sixteenth or early seventeenth century, Limoges enamels and with, by way of a handle to the lid, a small orange-tree of enamelled silver bearing wonderfully lifelike flower-buds and open blossoms (Plate XLVIII). According to a tradition told to the writer by one of the Museum officials, this graceful tree once belonged to Marie de Medici, the second wife of Henry IV of France, and it is a curious coincidence that a miniature orange-tree, together with a lemon and a pomegranate-tree of similar small size, all of them "so cleverly and artfully imitated that there was none who did not believe them to be real," were actually exhibited by that queen at a banquet given to the Spanish ambassador in Paris, in 1609.⁶⁰ Citrus fruits were such an important and profitable item in the export trade of Florence, that by one of the clauses of the treaty of peace signed in 1329 between the victorious Guelph league of Tuscany—which was led by Florence—and the Republic of Pisa, the latter was compelled to prevent the export of citrons, oranges, or lemons from any part of its territory.⁶¹ It does not, therefore, appear altogether so implausible to assume that the oranges in the coat-of-arms of the Medici refer to a time when that family was trading in citrus fruits, probably with the Jewish merchants who used to come down each summer from Austria, Germany, and Poland for the purpose of securing ritual citrons required

⁵⁹ OU, pp. 157 and 162.

⁶⁰ JH, IX, p. 214. An American journalist a few years ago, described amongst the treasures of the late Russian Czars in Moscow, "a little orange tree, eight inches high, in a mother-of-pearl tub, with ruby and pearl ropes squaring it off, emerald leaves, ruby fruits and diamond flowers. You press a button and the tree opens showing a tiny emerald nightingale sitting on a golden bough, singing and flapping its wings" (AE, March 1927, p. 158).

⁶¹ OU, p. 161.

by the Jewish communities established in those countries. It is known that, in 1389, the Archduke Albrecht III of Austria issued to three Jewish merchants a passport for travelling to Italy in quest of citrons.⁶² Rabbi Israel Isserlein of Ratisbonne, the foremost Talmudical authority of Germany during the first half of the fifteenth century, preferred for ritual purposes to the citrons of Rome those that were brought from the region of Apulia in southern Italy, which latter had, he believed, a finer taste and fragrance.⁶³ "Numerous Jewish merchants—writes J. B. Ferrarius in 1646—from Poland, Germany, and Mantua (i.e., Austria), arrive annually towards the beginning of the month of August on that part of the Ligurian coast which is called San Remo in order to buy in good time citron apples and palm branches . . . ; on the island of Corcyra (Corfu) the wealthiest Jews take care to buy up at very high prices those citrons which excel in point of smoothness and freedom from blemishes . . . they pack these apples into small boxes or other containers and send them to their friends in Italy, Belgium, and other countries as presents of exceedingly great value."⁶⁴

The important part which the citron was known to be playing in the ritual of the Jewish Feast of Tabernacles, coupled with the fact that the Crusaders found citrus fruits more widely grown in the Holy land than in any other country known to them, caused the people of mediaeval Europe to look upon the citron, the lemon, and the orange as typically Palestinian fruits, an opinion which was destined strongly to impress its mark upon the religious art of the late Middle Ages and the Renaissance.

Ever since the disappearance of the Roman Empire in the West, the cultural no less than the political life of southern Europe had been directed and inspired by or from Byzantium. A thousand years or so of a policy of ruthless unification, which strictly forbade all initiative in matters of philosophy or faith, had turned religion into a dry, lifeless formula characterized by a fanatical clinging to the preservation of beliefs and rituals in the exact form in which they had been inherited from previous centuries ; no wonder that, under such circumstances christian art

⁶² QF, p. 235 (No. 136). JM, IV, No. 2173.

⁶³ JT, III, p. 296.

⁶⁴ AJ, Book I, Ch. VII (p. 39).

itself—designed mainly to glorify a stereotyped religion or the most formalistic and etiquette-bound court that ever existed, and practised exclusively by priests brought up and saturated in the narrow conservative spirit of the time—had been reduced to the lifeless repetition of conventional formulas more and more estranged from reality. Generation after generation of painters had confined themselves to reproducing—with varying degrees of success in the choice of colours, dresses, precious stones and other accessories of decoration—models fixed long ago and faithfully adhered to for centuries; and, since this schoolmen-dictated culture was a product of the town, the outlook on religion as well as on art had been one that was typical of men educated and living in a big city, far from nature and its beauties. But in the measure in which the Italian cities had freed themselves of the political influence of Byzantium and had, one after the other, become independent self-governing republics, the spirit of political freedom, which inspired their citizens and gradually spread among the peasant on the land, soon brought about also a critical attitude with regard to the outward forms of religion. This newly awakened spirit of independent judgment on the part of the people was put to a particularly severe test when confronted with the lifeless works of the Byzantine painters, in which religious scenes, intended to appeal to man's noblest emotions, were found represented in a manner that robbed them of every semblance of reality. The stiff and lifeless attitude of the personages, the foreign and archaic surroundings in which they were placed and which had nothing in common with the landscape, the style of architecture, the dress and habits of the people in Italy, all these had ceased to satisfy a generation in whom the gentle monk of Assisi and his followers had only just aroused again the love of the countryside with its flowers and birds, the feeling of kinship with all that was alive around them, the capacity to enjoy the beauties of nature and to render their faith and their emotions in words. And so they were led also to seek a new style of artistic expression, in harmony with their passion for sincerity and truthfulness. Art still continued to have for its only object the representation of scenes from the lives of Jesus, His Apostles, and the Martyrs, or from the stories of the Old Testament. But,

whilst artists continued to paint the same religious scenes as those depicted by their predecessors, they strove to give their personages less conventional and more lifelike attitudes, and to place them in surroundings directly borrowed from nature. It was only natural for this new tendency to assert itself first in the region where St. Francis had lived and worked: and thus there was born in Tuscany the new naturalistic art of painting, of which Duccio di Buoninsegna of Siena (1260-1339) was the first great exponent. In his endeavour to make the surroundings in which his personages moved agree with the natural aspect of things, it seems that he was baffled for some time by the apparently insoluble problem of how to paint for his scenes of the life of Jesus a background that would be Palestinian and not Italian. He could not invent a landscape, for his artistic creed forbade him to paint things otherwise than as he saw them; and so, it seems, he was led to that naïve and yet subtle solution: to lay his scenes of the New Testament amongst the hills and vales of Tuscany, but to "naturalize" these into Palestinian landscapes by the addition of what was considered by him and by his contemporaries to be the most characteristically Palestinian of trees, the orange. The extent to which the orange-tree was regarded, even a century or two later, as a Palestinian tree is evidenced by the fact that the famous French merchant-prince and financier Jean Coeur, who visited the Holy Land in 1432,⁶⁵ had the palatial home, which he built himself at Bourges in 1443-1445, decorated with panels of sculptured plants including a palm, a date, and an orange-tree.⁶⁶ Duccio did not know of course that, with the sole exception of the shores of Lake Tiberias and the river Jordan, all the localities where the principal traditional scenes of Jesus' life were enacted lay high up in the Galilean or Judean hills where citrus trees have never been grown; and so his passionate desire for being truthful led him to betray truth itself. It also caused him to commit what at first sight must appear as inexplicable errors of proportion in the size of certain details of his pictures: in order to bring home to the onlooker that it is orange-trees, real Palestinian orange-trees, that he desired to paint, Duccio endeavoured to

⁶⁵ DI, p. 295.

⁶⁶ DD, p. 143.

reproduce exactly such minute botanical peculiarities as the double wings of the leafstalk characteristic of the sour orange, apparently the only one known in Tuscany in his days; and, in order to reproduce these tiny details on a scale that would enable them to be recognized by worshippers looking at the picture from a certain distance, he covered his small trees with leaves of enormous size. The example set by Duccio was immediately followed, and soon, it seems, the introduction of citrus trees into the background of religious scenes as a means of achieving the necessary Palestinian local colour became a standing convention from which during several centuries few Italian painters or sculptors dared depart, and to which we therefore owe a wealth of pictorial records of inestimable value for the study of the history of citrus varieties in Italy.

On the huge altar-piece called the "Maestà," which Duccio painted in 1308-1311 for the dome of Siena, orange-trees line the Siennese streets through which Jesus holds His "Entry into Jerusalem," and on the slopes of the Mount of Olives, oranges, not olives, are the only trees of the garden of Gethsemane (Plate XLIX), a name which—as is well known—means "the Oil Press." There can be no doubt that it was Duccio's example that moved others, more than a century later, to perpetuate the same mistake when treating the same subject. It is under an orange-tree that Jesus is resting in Fra Angelico's (1387-1455) delightful little picture which adorns one of the monks' cells at the Convent of San Marco in Florence: Giovanni di Paolo (1403-1482), a Siennese, has citron and orange trees,⁶⁷ so has also Andrea Mantegna (1431-1506) in that intensely dramatic scene on the predella of his altar-piece painted for the church of San Zeno at Verona, now at the Museum of Tours, in France (Plate L); and an admirable miniature by Guidoccio di Giovanni Cozzarelli (c. 1490), in one of the choir-books of the Dome Library at Siena shows Jesus resting under a lemon-tree heavy with ripe fruit.

The ubiquitous orange, lemon, or citron trees are present in thousands of Italian pictures illustrating every incident in the Gospel stories. Where the scenes are laid indoors

⁶⁷ Pinacotheca of the Vatican, Catal. No. 181.

the citrus trees are shown either set in movable tubs within the room, or planted—alone or in association with cypresses—behind the building and protruding above a wall or a suspended carpet forming the background of the picture. Thus, the "Annunciation" by Veronese (Plate LI) in the Venice Academy (No. 260), painted c. 1585, has orange-trees in square buckets. In the anonymous "Adoration of the Magi" after the manner of Fra Angelico,⁶⁸ and in that by Gentile de Fabriano⁶⁹ (1360-1428)—the first important picture of the Umbrian school, an offshoot of the school of Siena—orange-trees bent under a heavy crop of ripe fruit grow beside the house; and in Benozzo Gozzoli's dazzling frescoes of 1459-1463 in the private chapel of the Medici family⁷⁰ the procession of the three wise kings of the East is depicted as a brilliant hunting party descending the hill of Fiesole between orange-trees and cypresses.

Sano di Pietro's (1405-1480) "Flight into Egypt" at the Vatican, the "Baptism of Jesus" by a pupil of Mantegna in the Church of St. Andrea at Mantua, the "Noli me tangere" of Fra Angelico at the Convent of San Marco in Florence, have orange-trees; one of the miniatures in the Picture Bible of the Duke of Berri,⁷¹ which depicts Jesus on His way from the Mount of Olives to Jerusalem, shows a man breaking from orange-trees which stand by the side of the road branches with blossoms and fruit, which he throws on Jesus' path. In Domenico Ghirlandaio's fresco (c. 1490) of the Small Refectory at the Convent of St. Mark in Florence, orange-trees and cypresses are seen growing in the garden behind the hall where Jesus has his Last Supper with the Apostles (Plate LII); orange-trees also figure prominently in Fra Angelico's great "Descent from the Cross" (Plate LIII)⁷²—where two solitary orange-trees set into untilled and unwatered ground serve to remind the onlooker that the actual city walls of fifteenth century Florence which he sees before him are to be taken as those of the Holy City of Jerusalem itself—, in the "Pietà" by Cosimo Tura (1430-1495) at the Correr

⁶⁸ Museum of San Marco, Florence.

⁶⁹ Museum of San Marco, Florence (Date: c. 1390).

⁷⁰ At the Palazzo Medici Riccardi, in Florence.

⁷¹ At the Harleian Library.

⁷² Museum of San Marco, Florence.

Museum in Venice (Plate LIV), in Fra Angelico's fresco of "The Entombment" at the Convent of San Marco (Florence), and in a miniature of the same subject in a Franciscan Missal and Book of Hours of Italian workmanship, of the year 1380, in the Paris Bibliothèque Nationale.⁷⁸ One of the most beautiful pieces in the collection of ancient ritual objects preserved in the Old Hall of the Chapter at the Cathedral of Valencia, in Spain, is a sixteenth century altar-cloth (Catalogue No. 433) of gold and silver embroidered silk—of Italian inspiration if not workmanship—on which are represented scenes of the Passion of Jesus, situated amongst orange-trees covered with enormous open blossoms.

In numerous pictures portraying incidents in the life of the Saints, citrus trees appear in the same manner. A fresco by Gozzoli in the church of St. Augustine at San Gemignano represents the Saint seated in the shade of an orange-tree and reading a lesson to his brother monks; branches of lemon and shaddock trees with fruit are shown on Giovanni della Chiesa's "St. Catherine" in the Incoronata Church at Lodi (c. 1500); Gozzoli's frescoes of the life of St. Francis of Assisi in the Church of San Francesco at Montefalco have oranges in practically every scene; an orange-tree with gilded fruit figures in the bronze panel of "St. John in the Desert" (A.D. 1427) by the Siennese jewellers Turino di Sano and his son Giovanni on the baptismal font in the crypt of the Siena Duomo, as well as in Sano di Pietro's "St. Jerome in the Desert" (No. 1129) and "The Legend of St. Jerome and the Lion" (No. 1130), both in the Louvre; Gozzoli's "Martyrdom of St. Sebastian" in the Collegiata Church at San Gemignano has for its background a landscape with cypresses, thuyas, and orange trees, and the pictures of the same subject by Liberale da Verona (1451-1536) at the Kaiser Friedrich Museum in Berlin (No. 46a) (Plate LV), and by Giovanni Luteri, called Dosso Dossi (1480-1542), at the Brera Museum in Milan (No. 433) (Plate LVI) show the Saint being pierced with arrows as he stands tied by his hands to the branches of an orange-tree; etc., etc.

On the other hand, on account of an old Jewish

⁷⁸ MS, Lat., 757, fol. 84; reproduced in JG, Plate LXIX (description in Vol. III, p. 364).



Duccio di Buoninsegna: Jesus in the Garden of Gethsemane (c. 1310).

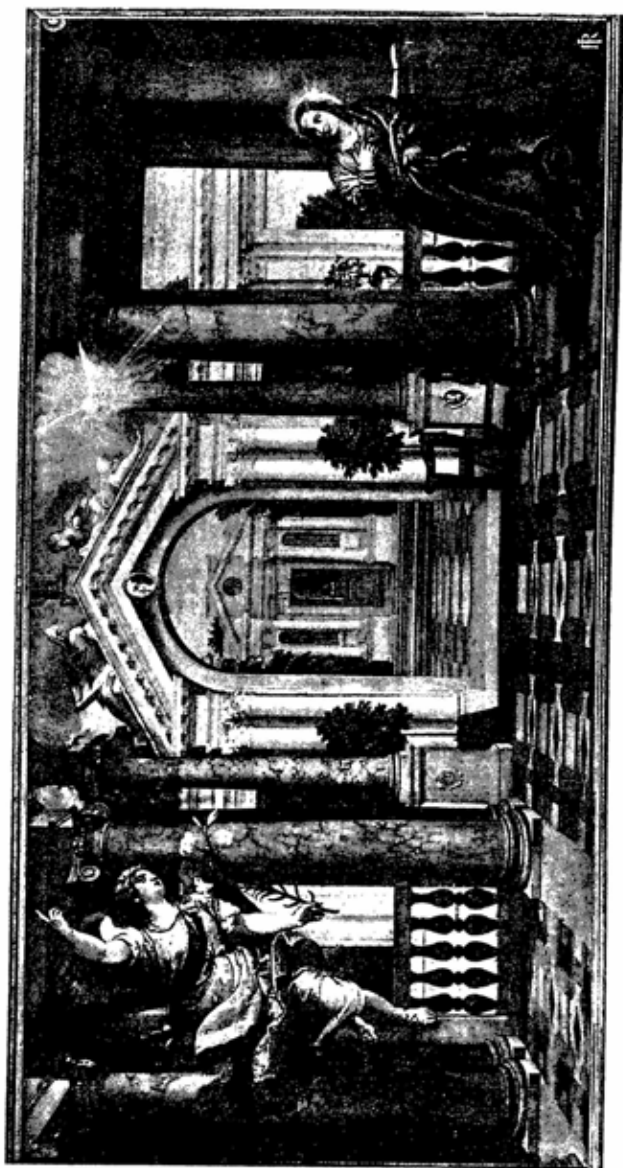
(Dome Museum, Siena.)



Mantegna: Jesus in the Garden of Gethsemane.

Photo : *Les Archives Photographiques*

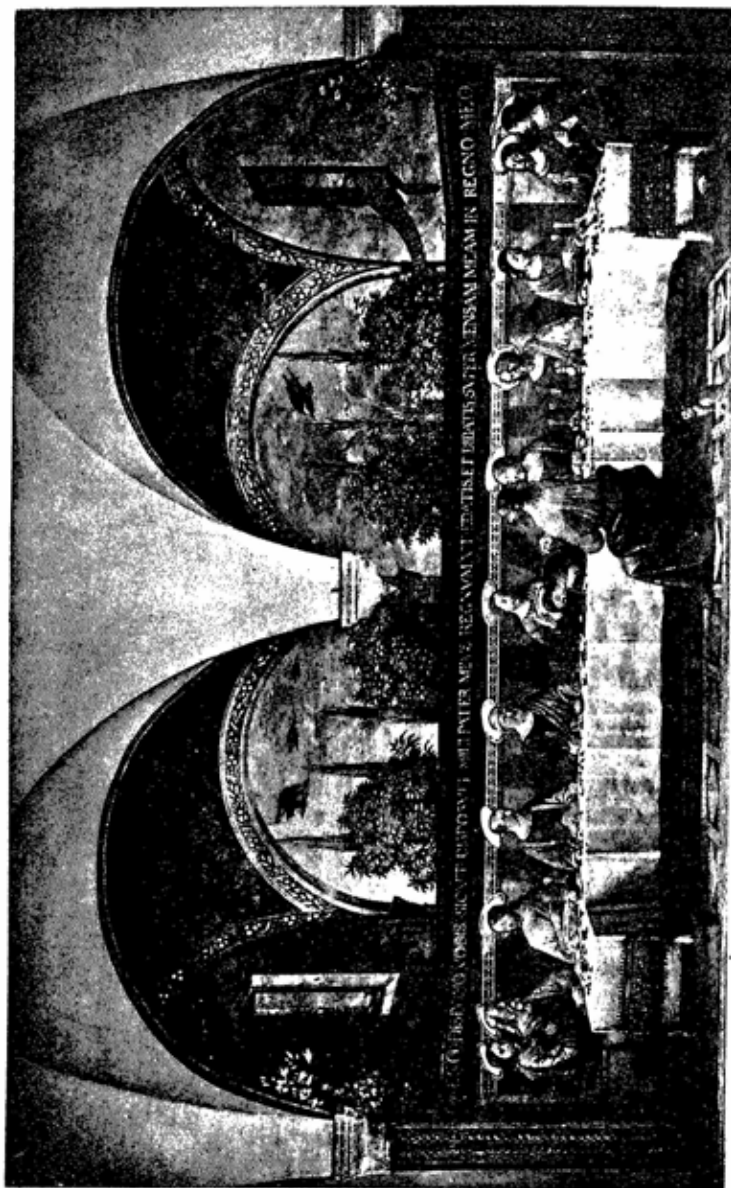
(Art Museum, Tours.)



Paolo Veronese: 'The Annunciation' (c. 1580).

(*Accademia di Belle Arti, Venice.*)

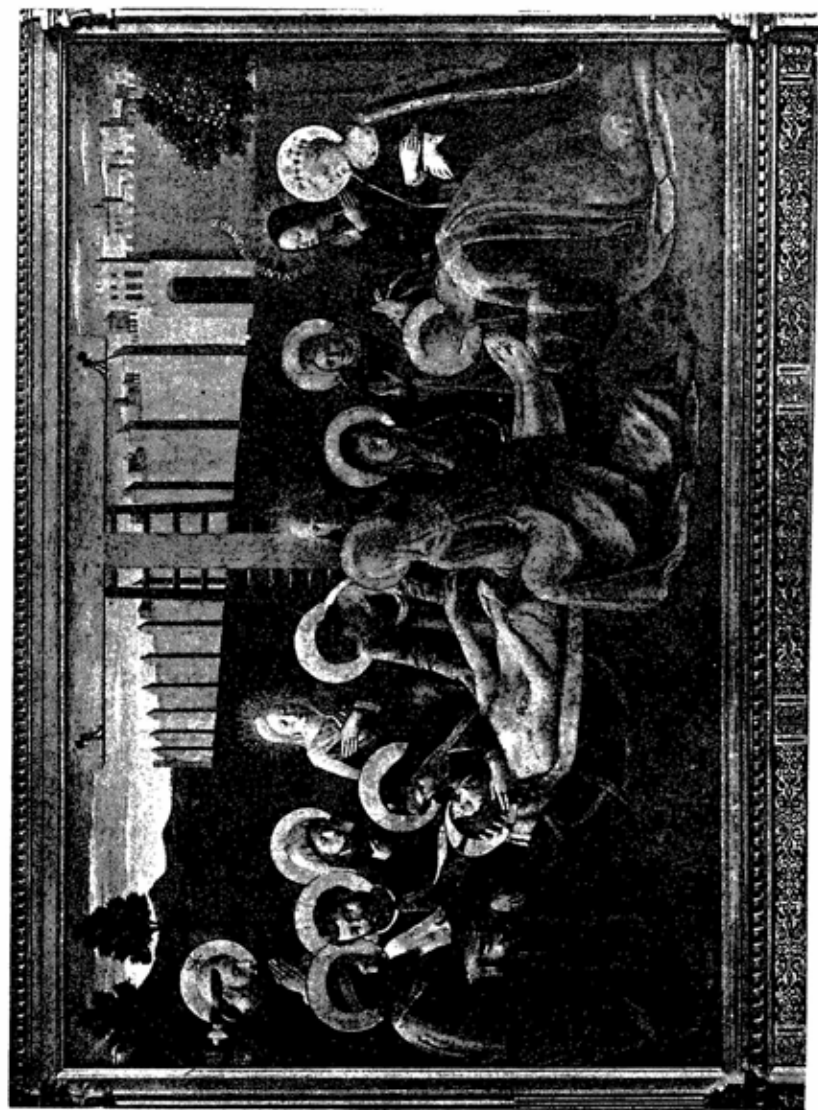
Photo: Brogi]



Domenico Ghirlandaio: The Last Supper (c. 1490).

(Museo di S. Marco, Florence.)

Photo: Brogi]



Fra Angelico: The Descent from the Cross (c. 1436).

(Museo di S. Marco, Florence.)

Photo : Brogi]



Cosimo Tura: Pietà.

(Museo Civico Correr, Venice.)



Liberale da Verona: St. Sebastian.

(Kaiser Friedrich Museum, Berlin.)

Photo : Photographische Gesellschaft, Berlin]



Giovanni Luteri, called Dosso Dossi: St. Sebastian.

(From the Church of SS. Annunziata at Cremona.)

(Brera Museum, Milan.)

tradition, according to which the "apple" which Eve received from the serpent and shared with Adam was in reality a citron, during the Middle Ages this fruit was sometimes, and the shaddock nearly always, called "Adam's apple" (see p. 139), and the citron sometimes "Apple of Paradise"; as a result of which, citrus trees became an indispensable feature in practically every representation of the Garden of Eden. Fra Angelico's "Annunciation" at the Prado in Madrid shows in the background Adam and Eve whom the Angel drives from a Paradise of palms and shaddock trees (Plate LVII); but already a generation before him, in 1390, the unknown author of the beautiful series of frescoes representing "The History of Creation," on the north wall of the cloister of the Campo Santo at Pisa, placed God creating Eve, and the serpent tempting the First Couple, in the shade of orange and citron trees. Still earlier, about 1350, Andrea Orcagna, in his immense "Triumph over Death" painted on the south wall of the same building at Pisa, depicted the celestial life of the blessed in a Garden of Paradise composed of nothing else but orange-trees heavy with their ripe fruit (Plate LVIII). The miniaturists followed the example set by the painters on walls and canvas: on a fifteenth century Italian miniature of Paradise, in a Picture Bible (MS. Fr. 166) at the Paris Bibliothèque Nationale, the woman-headed serpent has thrown her coils around the stem of an orange-tree;⁷⁴ and several miniatures depicting the creation of Adam and Eve in a Garden of Eden full of orange-trees adorn the border of a page (fol. 6 of vol. I) in Borso d'Este's magnificent bible⁷⁵ of about A.D. 1460.

Yet in no religious pictures do citrus trees, their blossoms, or their fruit, occur so often and so prominently as in those that have for their subjects the Madonna and Child, with or without Saints. In addition to the mere desire for Palestinian local colour, this may be, and is probably, due to the fact that throughout the Mediterranean countries the citron and the orange were, and still are, closely associated with the cult of the Virgin. The theologians of the Middle Ages held that by the Shulamite of the Song of Songs, whom the royal poet of Judah had

⁷⁴ FH, p. 80.⁷⁵ CB, Plate LVIII, fig. 76.

likened to the Cedar of Lebanon, no one else was meant than the Virgin Mary herself; and since—as we have seen in the writings of Jacob de Vitry and others—citrus trees were thought to be “maritime” varieties of the Lebanon cedar, they came to be regarded as symbolic of the greatness and the immaculate purity of the Virgin. Thus, in numerous Books of Hours, in the stained windows of churches and chapels, in tapestries, oil paintings and frescoes, we find pictures of the Virgin surrounded by a number of symbols drawn from the Song of Songs, and one of these ever-recurring symbols of her virtues is a citron or an orange-tree inscribed *cedrus*⁷⁶ or *exaltata cedrus*.⁷⁷ In many a legend golden apples are mentioned as attributes of the Virgin.⁷⁸ An ancient popular song of the peasants in Andalusia tells how Mary, journeying south with the child Jesus and with Joseph, came to an orange-tree that was guarded by a blind man and asked him to let her have just one orange for the child: “Take as many as you like—was the reply—for they are all yours; but the Virgin, so kind is she, did not pick more than three.”⁷⁹ This charming tale must have been known in Italy as well, for in an anonymous Italian “Madonna and Saints” of the fourteenth century, at the Louvre, St. Nicholas is represented holding three oranges (Plate LIX); this is also the case in Raffaellino del Garbo’s (1476-1524) version of the same subject at the Kaiser Friedrich Museum in Berlin (No. 87); in Cima da Conegliano’s “Virgin Enthroned” (c. 1498) at the Academy of Fine Arts in Venice (No. 36), St. Nicholas carries the three oranges on a book (Plate LX), whilst in Luca Signorelli’s “Madonna and Child with Saints” (1515) at the London National

⁷⁶ HK.⁷⁷ HJ.⁷⁸ GA, p. 10.⁷⁹ *Andamos mas adelante**Que hay un verdo naranjuez**Y es un ciego que lo guarda,**Es un ciego que no ve.**—Ciego dame una naranja**Para callar a Manuel.**—Coja Usted las que Usted quiera,**Que toditas son de Usted.**—La Virgin como es tan buena**No ha cogida mas que tres.*

(Quoted by GX, II, p. 267).



Fra Angelico : The Annunciation (c. 1439).
(Prado Museum, Madrid.)



Andrea Orcagna : (Section from) The Triumph of Death (c. 1350).

(Campo Santo, Pisa.)

Photo : Brogi]

Gallery (No. 1847) he still holds the book in his hands but the three oranges are placed on the floor, at his feet; in two pictures of the Virgin and Child by Luini—the one at the Layard Gallery in Venice, the other at the Kaiser Friedrich Museum in Berlin—the little Jesus holds an orange in His hand; in Lorenzo Lotto's (1476-1555) "Sacra Conversazione" at the Galleria Borghese in Rome, the Child has just dropped on the floor an orange which had obviously been picked for Him from the tree behind His Mother's seat; in Moretto's (1498-1554) "Madonna" of the Provinzialmuseum in Bonn He is seen straining His whole little body in an effort to reach one of the big yellow fruits that shine forth among the dark branches of a lemon-tree above Him. A picture of c. 1500 at the Brera Museum in Milan (Plate LXI) shows the Madonna and Child standing under the branches of an orange-tree with two oranges whilst a saintly woman offers a third orange to the little Jesus; and Sano di Pietro's (1405-1480) "Flight into Egypt" at the Vatican (No. 184) represents the Holy Family just passing the Orange Tree of the Legend (Plate LXII).

Another legend, current in the Aegean Islands, tells how the Virgin Mary, passing through the valley of Jehoshaphat, was so charmed by the pleasant smell of orange and citron trees in bloom that she stopped to bless them, wherefore since that day orange and citron trees are covered all the year round with fragrant blossoms and plenty of fruit.⁸⁰ At Avola in Sicily, on Easter Sunday, in order to celebrate the resurrection of Christ and of the sun of spring, they set up two poles and decorate them with branches of the orange-tree;⁸¹ another ancient Sicilian custom consists in decorating the Virgin's images with these branches.⁸² One likes to think that Botticelli and Correggio had some such custom in mind, the former when in his delightful "Madonna with Child and Angels" (c. 1490) he painted a thick wreath of orange leaves and fruits around the canopy of the open tent under which the kneeling Virgin is offering her breast to the Child;⁸³ the latter—who was the first painter at all to open his ceilings for the sunlight to come through—in throwing

⁸⁰ JT, III, p. 311.⁸¹ GX, II, p. 268.⁸² GX, II, p. 268.⁸³ At the Ambrosiana Library, Milan (No. 15).

a heavy wreath of leaves with oranges and lemons around the opening in the ceiling of the hall in which he placed his "Madonna with St. George" (c. 1520) of Dresden;⁸⁴ and in Mantegna's celebrated "Madonna della Vittoria" (The Virgin of the Victory)—painted in 1495 by order of Gianfrancesca Gonzaga in commemoration of the battle of Fornovo which that prince found it convenient to represent to his lieges as an Italian victory though in fact the French had remained the masters of the field—the Virgin is seated under a bower made of a frame of delicately wrought iron-work covered with garlands of orange, lemon, and citron branches with blossoms and fruit (Plate LXIII).⁸⁵

Orange-trees combined with palms and cypresses form the "Holy Land" background in Fra Angelico's two versions of the "Madonna with Child and Saints"—of which he painted one for the Church of S. Marco in Florence and the other for that of S. Bonaventura in Mugello⁸⁶—as well as in one by his pupil Alesso Baldovinetti (1425-1490),⁸⁷ whilst only orange-trees and cypresses appear on a picture by another anonymous pupil of the same master,⁸⁸ the frame of which bears the crest of the Medici. There is, in truth, no limit to the resourcefulness of the Italian painters in their arrangements of citrus trees, alone or together with other plants, in order to produce the illusion of a Palestinian atmosphere. A combination of orange-trees and pomegranates is the formula used by Andrea Verocchio,⁸⁹ Sebastian Mainardi,⁹⁰ Domenico Ghirlandaio⁹¹ (c. 1485); a Virgin and Child by Giovanni di Paolo (1445) are seated in the midst of a grove of oranges, citrons, and pomegranates;⁹² Mantegna

⁸⁴ At the Staatsgalerie, Dresden.

⁸⁵ At the Louvre Museum, Paris (No. 1374).

⁸⁶ Both pictures are now at the Museo S. Marco, Florence.

⁸⁷ At the Galleria degli Uffizi, Florence (No. 487).

⁸⁸ At the Louvre Museum, Paris (No. 1294).

⁸⁹ "Madonna, Child, and two Saints," in the Cathedral of Pistoia.

⁹⁰ "Madonna, Child, and two Saints," painted for the church of Vallombroso, now at the Museum of S. Marco in Florence (No. 4).

⁹¹ "The Virgin, Child, and several Saints" at the Uffizi Gallery, Florence (Nos. 8388 and 881).

⁹² At the Academy in Siena.



The Virgin, Child, and Saints (Italian School, Fourteenth Century).
Photo : Braun et Cie (Louvre, Paris.)



Cima di Conegliano: *The Virgin Enthroned* (c. 1498).
(*Accademia di Belle Arti, Venice.*)

has either orange-trees alone,⁹³ or orange and lemon trees,⁹⁴ or orange, lemon, and citron trees,⁹⁵ or orange, lemon, citron, and pomegranate trees.⁹⁶ Domenico Veneziano (c. 1400-1461)⁹⁷ and Cima da Conegliano (c. 1460-1517)⁹⁸ have orange-trees only, whilst both Cariani's (1480?-1550?)⁹⁹ and Girolamo dai Libri's (1474-1551, Plate LXIV)¹⁰⁰ "Virgin and Child with St. Anne" are seated in front of a citron-tree covered with fruit and blossoms and drawn with a remarkable accuracy of botanical detail.

Once citrus trees had become a familiar subject for the brush of the painters of religious subjects, it could not remain long before they became favourite themes also in the purely worldly art of decoration. One of the two admirable bronze doors—namely that which faces the Duomo—which Lorenzo Ghiberti, the father of Florentine sculpture, cast for the Florence Baptistry sometime during the first half of the fifteenth century, has a frame of foliage, birds, small animals, and fruit such as citrons, grapes, strawberries and pomegranates; the leaves, blossoms, and fruit of citron and lemon trees figure prominently in the decoration of the central bronze door of the chief portal at the Cathedral of Pisa, by Giovanni da Bologna (1606); lemons and their leaves are amongst the bunches of fruit in the marble garland that surrounds the semi-circular upper panel of Antonio Rossellino's graceful fountain (A.D. 1446) at the Abbey of La Badia in Fiesole, the seat, in later days, of Lorenzo the Magnificent's

⁹³ In "The Infant Christ as master of the world with the little St. John, Joseph, and Mary" (c. 1490) at the National Gallery, London; also in "The Virgin and Child with Saints" which forms the central picture of the altar-piece in the church of S. Zeno at Verona.

⁹⁴ "The Virgin and St. Elizabeth," at the church of S. Andrea, in Mantua.

⁹⁵ "Madonna and Child in Clouds, with four Saints" (1497), belonging to Prince Trivulzio of Milan.

⁹⁶ "The Virgin and Child with St. John the Baptist and Magdalen," National Gallery, London (No. 274).

⁹⁷ "The Virgin and Child with four Saints," at the Uffizi Gallery, Florence (No. 884).

⁹⁸ "Madonna dell'Arancio" (The Virgin of the Orange-Tree) with Child and two Saints, originally in the church of Santa Chiara at Murano, now at the Academy in Venice (No. 815).

⁹⁹ At the Galleria Nazionale, Rome.

¹⁰⁰ At the National Gallery, London (No. 748).

"Platonic Academy" of humanists. Garlands of oranges, lemons, citrons and pomegranates, with their leaves, frame the painted arches in Ghirlandaio's "Last Supper" illustrated in Plate LII; at the Villa d'Este—built in 1550 for Cardinal Ippolito d'Este, the son of Lucrezia Borgia—the walls of the great banqueting hall are covered with frescoes and painted stucco bas-reliefs representing different kinds of fruit including citrons and oranges. At the Palazzo Medici-Riccardi in Florence, in the centre of Luca Giordano's gigantic painted ceiling of 1682 "Ceres scattering the seeds that they may fructify," there rises, as the symbol of fertility *par excellence*, an orange-tree from which a goddess armed with a sickle is about to cut the golden fruit; and of the thousands of big and small reliefs in enamelled terra-cotta from the workshops of the famous family of the Della Robbia (1400-c. 1530), which decorate the façades of public buildings or the walls in churches and in private houses, or fill the halls in countless museums all over Italy—scenes of Jesus' life, portraits of the Saints, or purely worldly subjects like the imposing coat-of-arms of King René of Anjou from a villa near Fiesole and now at the Victoria and Albert Museum in London (No. 6740, 1860)—there are very few that are not framed in a broad wreath of fruits and foliage in their natural colours, and on these Della Robbia wreaths, oranges, citrons, lemons or limes with buds and open blossoms are a regular and striking feature in association with grapes, quinces, pomegranates, apples, pinecones, and cucumbers. Some forty years ago, when the old quarters of Florence were demolished in order to make room for modern streets and buildings, there came to light a number of fine wall-paintings of the fifteenth and sixteenth centuries, a few of which, carefully detached from their positions, are now preserved in the Museum of St. Mark; a few copies, made after the Florence originals, are kept at the Victoria and Albert Museum in London. In some cases they have just a frieze of fruit trees, in others they represent a whole section of an orchard seen either through the openings of a Gothic arcade or from under a crowning canopy; the trees are of different sorts: plum, pear, olive, pomegranate, orange, and lemon, but it is the latter—the citrus trees—that are most often met with.¹⁰¹

¹⁰¹ Museum of San Marco, Florence (Room V, Nos. 4 and 8).

The trees are set out at more or less equal distances around the walls; roses and shrubs occupy the space beneath them, and birds hover around or settle upon the branches which are heavy with fruit; a band of netting or lattice encloses the painted garden.¹⁰² The whole is vividly reminiscent of the garden-scenes depicted on the wall paintings of the Villa of the Empress Livia at Prima Porta (see p. 86), except that the strongly naturalistic style of the latter stands in marked contrast with the somewhat stiff but none the less charming conventionality with which the trees are drawn by the Florentine artists. It seems that such garden scenes were a favourite device for the internal decoration of Italian houses and that the fashion goes back at least a whole century beyond the dates which have been ascribed to the wall-paintings in the Museum of St. Mark; for at the ancient palace of the Popes at Avignon, in southern France, the so-called *Tour de la Garde-Robe* (i.e. the Wardrobe Tower), which was completed in 1342-1343, contains on the third floor a room decorated—it is believed by Italian artists—in very much the same style, only that here the orchards are more in the nature of thickets and that in their shade a number of personages disport themselves with hunting and fishing; as in Florence, orange-trees are very prominent in the pictures (Plate LXV). To a much later date (seventeenth century) belongs the frieze "The Labours of the Months," an Italian embroidery in satin stitch on silk gauze, at the Victoria and Albert Museum, London (Nos. T.286-286 G, 1920), a section of which is reproduced in Plate LXVI; it shows a party of hunters in an orchard: the trees represented are, from left to right, an almond, an orange, and a pomegranate tree.

The coming into vogue of garden scenes as themes for the decoration of living-rooms is in all countries and at all times a corollary of a revival of interest in actual gardening. Tuscany, where the fashion of trees and flowers as decorative themes in the internal treatment of houses first arose, was also the cradle of the Renaissance garden which was destined to influence profoundly the whole art of gardening in Europe.

¹⁰² NM, Vol. I, Ch. iii. BU, pp. 107-108.

The villas and gardens of the country around Florence occupy already considerable space in the picture which the chronicler Villani (c. 1275-1348) drew of the wealth and splendour of that city early in the fourteenth century; if what he says is true, there were few inhabitants in Florence, either burghers or noblemen, who did not own in the neighbourhood of the town, houses and gardens still more beautiful than those they had in the city.¹⁰³ What some of these country seats may have looked like, we are enabled to imagine through the details mentioned in Paolino Pieri's History of Florence, where it is recorded that some time during the last third of the thirteenth century Ser Durante dei Chiermontesi—the same Ser Durante whom Dante castigates¹⁰⁴ for his fraudulent administration of the municipal salt monopoly—had planted at Borgo Pinto a garden which had no equal in Tuscany, and which contained some 1,400 orange and citron trees “that covered nearly the whole of Florence with their branches.”¹⁰⁵ And not far away, near the city moat, the family of the Leoni owned an orange orchard which may not unlikely have had some connection with the locality in which Fra Angelico has situated his “Descent from the Cross” reproduced in Plate LIII. In 1348 Italy was visited by a very bad outbreak of plague which caused many deaths, particularly in Florence where, as mentioned before, one of the victims was the historian Villani. It is in order to avoid infection, the risk of which is greater within the city than outside, that in Boccaccio's “Decameron” a company of seven gentlewomen and three noble youths of Florence retire to a villa on the hills of Fiesole, where they spend the ten days during which they tell each other the hundred famous tales. The garden of the villa, “which was on the one side of the palace, and walled round about, . . . seemed so full of beauties at their first entrance, that they were more attentive in viewing every part. In the middle of this garden, what seemed more delightful than anything else, was a plot of ground like a meadow, the grass of a deep green,

¹⁰³ GU, I, p. 211. ¹⁰⁴ Purgatory XII, 105. Paradise XVI, 105.

¹⁰⁵ MS, quoted in OU, p. 161. Cp. also EP, p. 250, where the number of trees is given as 3,500.



Pseudo Boccacino (c. 1500) : Madonna and Child.

Photo : Alinari]

(Brera Museum, Milan.)



Sano di Pietro (1405-1480) : The Flight into Egypt.

(Vatican, Rome.)

Photo : Anderson]



Andrea Mantegna : The Virgin of Victory (1495).
Photo : Archives Photographiques] (Louvre Museum, Paris)



Girolamo dai Libri : Madonna, Child and Saint Anne.
(National Gallery, London.)

spangled with a thousand different flowers, and set round with orange and citron¹⁰⁶ trees whose branches were stored with ripe fruit and blossoms, at the same time affording a most pleasing object to the eye, as well as a grateful odour to the smell. In the centre of this meadow was a fountain of white marble, beautifully carved . . ."¹⁰⁷ That the patricians and wealthy merchants of Florence looked upon their citrus trees as a particularly valuable adornment of their gardens and a visible proof of wealth may be gathered, *inter alia*, from the details of the decoration of a number of *cassoni* (marriage coffers) of Florentine make. The Victoria and Albert Museum, in London, has one,¹⁰⁸ of about A.D. 1370, decorated with three painted scenes of which the central one shows a bridegroom conducting his bride to her new home, across a landscape whose whole background is filled with orange-trees in fruit. Another such *cassone*,¹⁰⁹ of the early fifteenth century, covered with pictures illustrating Boccaccio's novel "The Sultan Saladin and Messer Torello,"¹¹⁰ shows the latter receiving the Sultan in the garden of his country-house near Pavia, and the only trees shown in the wealthy merchant's garden are again orange-trees heavily loaded with ripe fruit. At Padua, the humanist cardinal and statesman Pietro Bembo had, from 1487 onwards, a "most beautiful house . . . with a magnificent garden . . . full of the finest espaliers of lemons and oranges";¹¹¹ similar espaliers against the sustaining walls of terraces adorned the gardens of Alessandro Sforza's summer residence at Pesaro, called the "Villa Imperiale" because an emperor, Frederick III, had laid its foundation-stone.¹¹² Hedges of orange, lemon, or citron trees figure very prominently in many of the paintings of Andrea Mantegna (1431-1506), *inter alia*, in his "Samson and Delilah" (National Gallery, London, No. 1145), in the representations of the Four Evangelists around the ceiling of Mantegna's own funeral chapel in the Church of S. Andrea at Mantova, in the "Parnassus" (Plate LXVII) at the Louvre, originally

¹⁰⁶ not "cedar," as erroneously rendered in most English versions.

¹⁰⁷ CZ, 3rd day, prologue.

¹⁰⁸ No. 5791-1860.

¹⁰⁹ At the Museum of the Bargello, in Florence.

¹¹⁰ CZ, 10th Day, Novel IX.

¹¹¹ CT, I, p. xxxvi.

¹¹² GU, I, p. 227.

painted by him for the *Grotta*, Isabella d'Este's miniature museum at the ducal palace at Mantova. The Spaniard Ruy Gonzalez de Clavijo described the "many beautiful houses and gardens, containing oranges, lemons, citrons, and vines" which he found in 1403 within the walls of the city of Gaeta,¹¹³ north of Naples; but Gaeta, of course, had then been for several centuries part of the Kingdom of Sicily. So had Naples, where the retired statesman Jovianus Pontanus (1426-1503) composed in or about A.D. 1500, his Latin poem "*De Hortis Hesperidum*,"¹¹⁴ the first known treatise of citriculture of European authorship, which owed its inspiration to the aged author's recollection of the days when he and his wife, still young, found their greatest joy in looking after the orange-trees of their garden on the Vomero at Naples. Half a century later, Agostin Gallo, of Venice, praises in enthusiastic language the gardens of several Italian nobles, such as that which belonged to the family of the Cazzaghi at Bottecino, with its beautiful fountain "surrounded by several extensive orchards of citrons, lemons, and rare orange trees."¹¹⁵

However, it was the sixteenth and part of the seventeenth centuries—the age of maturity of what is generally called the Renaissance villa—that gave citrus trees, both in theory and practice, their final status as an element of the first importance in the Italian garden. The trees were still mostly set in large terracotta vases of flower-pot shape or in round or square wooden tubs, or again in graceful earthenware bowls like the one that holds the solitary orange-tree in the centre of Giovanni Bellini's "*Allegory*" of Paradise (Plate LXVIII) no. 631 of the Uffizi Gallery at Florence (c. A.D. 1488), and these vases or tubs were either fixed on balustrades and pillars or, more often, movable so as to enable the gardener to arrange the trees into small groves or ornamental designs.¹¹⁶ But on other occasions, and particularly in well sheltered positions, they were set into the soil just like any other plant, and grown either in shrub form or on espaliers, or trailed over elaborate pergolas, or pruned into fancy shapes, like the arcades of oranges and citrons in Mantegna's picture "*Wisdom triumphing over the Vices*" (No. 1376 of the

¹¹³ EG, p. 10.¹¹⁵ GE, p. 100.¹¹⁴ BA.¹¹⁶ EQ, p. 21.

Louvre Museum in Paris), or just into straight walls of green, as in the scene entitled "The Roman Hesperides" (*Gli Esperidi Romani*) in the frontispiece to Falda's "Giardini di Roma" of 1676 (Plate LXIX).

Opposite Stresa on the Lago Maggiore, the two small islands of Isola Madre and Isola Bella still have the sustaining walls of their terraced gardens—which Lancilotto Borromeo started about A.D. 1500¹¹⁷ and successive generations of his descendants increased and elaborated with more fancy than good taste, and which Evelyn described admiringly in 1646¹¹⁸—clad with the original espaliers of lemons. On the shores of Lake Garda, the Villa San Vigilio—which the famous fortress-builder Sanmichele designed about 1540 for the learned humanist and lawyer Agostino Brenzoni of Verona—still shows substantial remains of the three highly decorative citrus gardens of which its first owner was so justly proud: the "Venus Garden" with its statue of the goddess of Love under the great citron-pergola, facing a plain parterre of myrtles; the "Adam's Garden" which owes its name to the shaddock trees that once filled its entire space; and, the "Apollo Garden" which Brenzoni himself describes in a letter to a friend as "quite filled with orange and lemon trees."¹¹⁹ Bartolomeo Taegio, who dedicated to the Emperor Ferdinand I the apology of the rustic life which he published in 1559 under the title of "La Villa," describes at Castellazzo near Milan the famous garden of Cesare Simonetta, "the most beautiful and most refined garden I have ever seen . . . [of which the best part was] a small meadow coloured with a thousand varieties of flowers . . . and completely shut in by masses of lemon, orange and citron trees."¹²⁰ Orange-trees are a conspicuous feature in the gardens of the Palazzo Doria in Genoa,¹²¹ which the Grand-Admiral Andrea Doria built for himself in 1530 in the place of an ancient palace presented to him as a gift by the city. At Florence, the partiality for citrus trees, which was a common trait amongst its citizens, moved them to try to acquire trees of every new variety that became known, so that the collections of citrus varieties in Florence became one of the interesting sights of the

¹¹⁷ BR, pp. 364-365.

¹¹⁸ FR, I, p. 228.

¹¹⁹ GU, I, pp. 255-257. ¹²⁰ OO, pp. 57-67. ¹²¹ FR, I, p. 87.

city; prominent among these collectors was the Grand Duke Francesco I of Medici (reigned 1574-1587), who brought from the Gulf of Naples large numbers of trees of new varieties, some of which were placed in the "hanging garden" which he had laid out on the roof of the Loggia dei Lanzi,¹²² whilst others were planted in the grounds of the small castle known as the Casino.¹²³ The novelist Bandello (1480-1561) refers in admiring terms to the masterful manner in which nature and art combined to adorn the country-side around Naples with hills clad with oranges, citrons, and lemons, with fruitful valleys, and crystalline brooks,¹²⁴ and the traveller Leandro Alberti writes similarly that "around the city [of Naples] there are beautiful and spacious gardens, adorned with oranges, lemons, citrons, and other similar trees."¹²⁵ It was the orange gardens of his native Ferrara that Ludovico Ariosto had in mind when he wrote those famous verses of his "Orlando Furioso":

*"Vaghi boschetti di suavi allori,
di Palme, et d'amenissime Mortelle,
Cedri, et Naranci, ch'avean frutti, et fiori
cotești, in varie forme e tutte belle
facean riparo a fervidi calori
de giorni estivi, con lor spesse ombrelle
et tra li rami con sicuri voli,
cantando se ne gian li Rosignuoli."*¹²⁶

But it is to Rome and its neighbourhood that one must go for the great masterpieces of the Italian villa-builders of the Renaissance. Rome had its own traditional connection with the orange, for there, as has been mentioned already, in a corner of the convent of St. Sabina on the Aventine stood the orange-tree (see Plate XLIII) which the founder of the Dominican order was believed to have planted with his own hands in A.D. 1200. The monks distribute the fruit and the leaves to the pilgrims

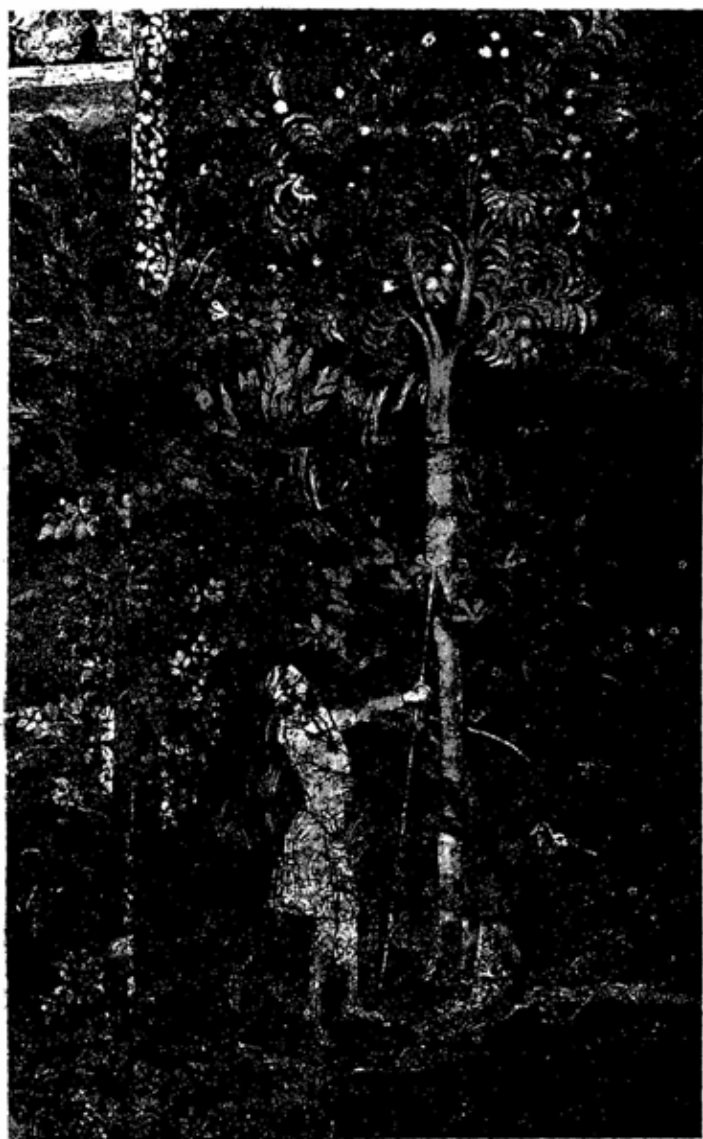
¹²² According to the MS *Agricoltura sperimentale* of 1595-1596 by the padre Agostino del Riccio (Vol. I, sheets 125 and 127) quoted in OU, p. 162.

¹²³ *Ibid.*, Vol. I, sheet 149, quoted in OU, p. 157.

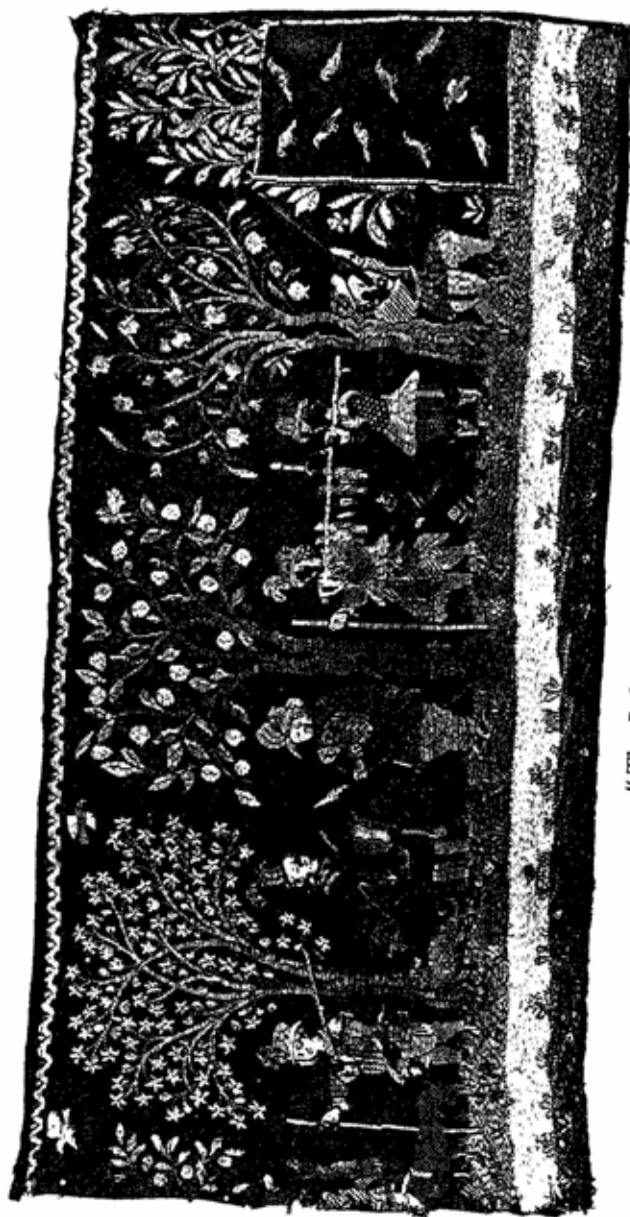
¹²⁴ CR, Part II, *Novella vii* (Vol. II, p. 240).

¹²⁵ BR, p. 155.

¹²⁶ CI, p. 29b (*Canto VI, ottava 21*).



Avignon : Palace of the Popes (Fourteenth Century).
(Frescoes of the "Wardrobe Tower.")



"The Labours of the Months."

Seventeenth Century Italian Embroidery (Satin Stitch on Silk-Gauze).

(London, Victoria and Albert Museum.)

who visit the convent ; it is, no doubt, to these oranges of St. Dominic, to which certain miraculous effects were ascribed, that Ulrich von Hutten refers in his anticlerical satire *Epistolae Obscurorum Virorum* (Letters of Obscure Men) of A.D. 1515, when he writes:

" This is written at Rome, where grow miraculous apples,
And in the huckster's stalls it is by the pound that they
sell them,
This I have seen with mine eyes, and I by experience
know it. Amen." ¹²⁷

But in the sixteenth century—the time when this tradition regarding St. Dominic's orange-tree first appears in print—the Pope did not need to go to St. Sabina or send to the huckster's stalls in order to obtain oranges ; for, in his own Vatican, the papal villa known as the Belvedere, had a celebrated orange garden ¹²⁸ which a Venetian ambassador, who saw it in 1523, described as " extremely beautiful, one half of it occupied by flowers, laurels, mulberry trees and cypresses, whilst the other half is paved with square terracotta slabs ; on each square stands a very fine orange tree, and of such there are a great many, all standing in the most perfect order." ¹²⁹ Only in sixteenth century Rome could it happen that Raphael himself should design and actually supervise the building of Cardinal Giulio de Medici's home, since known as the Villa Madama on account of Marguerite of Parma who resided there at one time ; to-day it is no more than a very poor ruin, but the original plans are still extant and show an elegant double flight of steps leading from the terrace in front of the main reception rooms down into a sunken orange garden. ¹³⁰ At the garden of the Quirinal—the Pope's palace on the Monte Cavallo—which was begun in 1574, a feature greatly admired were the lanes bordered with hedges of laurel, myrtle, and orange trees, which John Evelyn, half a century or so later, described as " above a man's height ", ¹³¹ and a few years later (1580) work was

¹²⁷ FO, Book II, 2.

¹²⁸ For a seventeenth century picture of it, see NB, Plate IX.
" *Hortus malis auris et fontib.*"

¹²⁹ MS, p. 114.

¹³⁰ GU, I, pp. 244-246.

¹³¹ FR, I, 134 (29th November, 1644).

started on the Villa Medici on the Monte Pincio, where, along the sustaining walls of the terraced gardens, espaliers of orange-trees alternated with niches in which newly recovered antique marble statues were set up.¹³² In addition to citrus gardens, orange-trees set in tubs on the ramps of staircases and on the balustrades of terraces are favourite devices in the villas of the seventeenth century, be it at the famous Villa Aldobrandini in Frascati¹³³ which a pupil of Michelangelo built for a "nephew" of Pope Clement VIII, or, in Rome, at the Villa Borghese¹³⁴ where Evelyn admired also the thick espaliers of citron-trees,¹³⁵ and at the Villa Pamfili¹³⁶ where, in rivalry with the Villa Medici, the walls of the "Orange garden" were covered with espaliers of citrus fruits alternating with niches containing antique marble statues, whilst dwarf orange-trees set in terracotta tubs adorned the balustrades above the walls (Plate LXX). The four pictures from Ferrari's "Hesperides" reproduced on Plates LXXI to LXXIV illustrate the various stages in the evolution of the structures used to protect citrus trees during the winter season. The most primitive type consisted of a portable thatched roof resting on a wall and wooden posts (Plate LXXI),¹³⁷ or on such posts only (Plate LXXII).¹³⁸ In the examples before us, these structures serve as protection for espaliers and pergolas, and also afford shelter to citrus trees grown in tubs or pots. Plate LXXIII shows a more advanced type: a roof of tiles, again supported by a wall and wooden posts, but built over the entire area of the orange orchard itself.¹³⁹ Lastly, Plate LXXIV depicts the "orange-house" of the Villa Aldobrandini at Frascati, a vaulted gallery facing south, where citrus trees were grown *in sitio*, from the nursery stage to mature age.¹⁴⁰

It is a remarkable and somewhat surprising fact that, in contrast with Italy and Moslem Spain, Christian Spain for several hundred years after the conquest of Granada and the final expulsion of the Moors produced very few scientific authors who wrote about citrus fruits. The two

¹³² GU, I, pp. 314-316; fig. 227 on p. 315.

¹³³ See the engraving by Specchi, reproduced in GU, I, p. 333 (fig. 242). EQ, I, p. 177.

¹³⁴ FU, fol. 15.

¹³⁵ FR, I, p. 132 (28th Nov. 1644).

¹³⁶ FU, fol. 20.

¹³⁷ AJ, p. 153.

¹³⁸ AJ, p. 147.

¹³⁹ AJ, p. 463.

¹⁴⁰ AJ, p. 457.



Mantegna : Parnassus.

(*Louvre Museum, Paris.*)



Giovanni Bellini : Allegory (c. 1488).

Photo : Alinari]

(Uffizi, Florence.)

outstanding exceptions are Herrera and Monardes. Gabriel Alonso de Herrera (c. 1480–c. 1560) was the author of a "*Libro de Agricultura*" which has served for centuries as the standard work on Spanish agriculture and horticulture; originally published in 1513, it reached as many as sixteen editions in the course of the sixteenth century, eight in the seventeenth, and another three in the eighteenth century. Thoroughly acquainted with the writings of the Greek, Latin, and Arab agronomists, himself a farmer and the son of a farmer, his practical knowledge and powers of critical observation well developed through lengthy travels in France, Italy, and Germany, Gabriel Alonso de Herrera could not be satisfied with being a compiler only. He mentions the opinions of his predecessors, but considers them carefully and critically before making their conclusions his own, a modern method which, added to an easy and fluent style, cause the reading of the book to be a real pleasure even to-day. Herrera is the first European writer to refer to the use that can be made of the wood of citrus trees for cabinet-making: "The trunks of the citron and the lemon do not become thick enough to allow their wood to be made use of profitably; but from the orange tree one can obtain boards of beautiful colour and polish, which will not easily decay or warp, and which are therefore very useful for the making of very delicate furniture."¹⁴¹ Herrera is also the first writer to record the use of citric acid in the leather industry.¹⁴² Yet, in spite of the caution he generally displays before accepting the statements of older writers, he continues believing that "to drink a *real's* weight of citron seeds mixed with wine, honey, and warm water is useful against many kinds of poison, in particular against the sting of the scorpion," and that "the smelling of green lemons or citrons is helpful in times of pestilence."¹⁴³ He even improves upon the *Geoponica*—a work on which he repeatedly draws—in regard to the methods for obtaining sweet citrus fruits. "To make sour orange-trees bear sweet oranges there are several ways or artifices, and the same applies to lemons and citrons and the others: (i) take the seeds and let them soak for three days in water sweetened with a little honey, or in milk—and ewe's milk will be

¹⁴¹ HH, fol. 93b.¹⁴² HH, fol. 93b.¹⁴³ HH, fol. 93b.

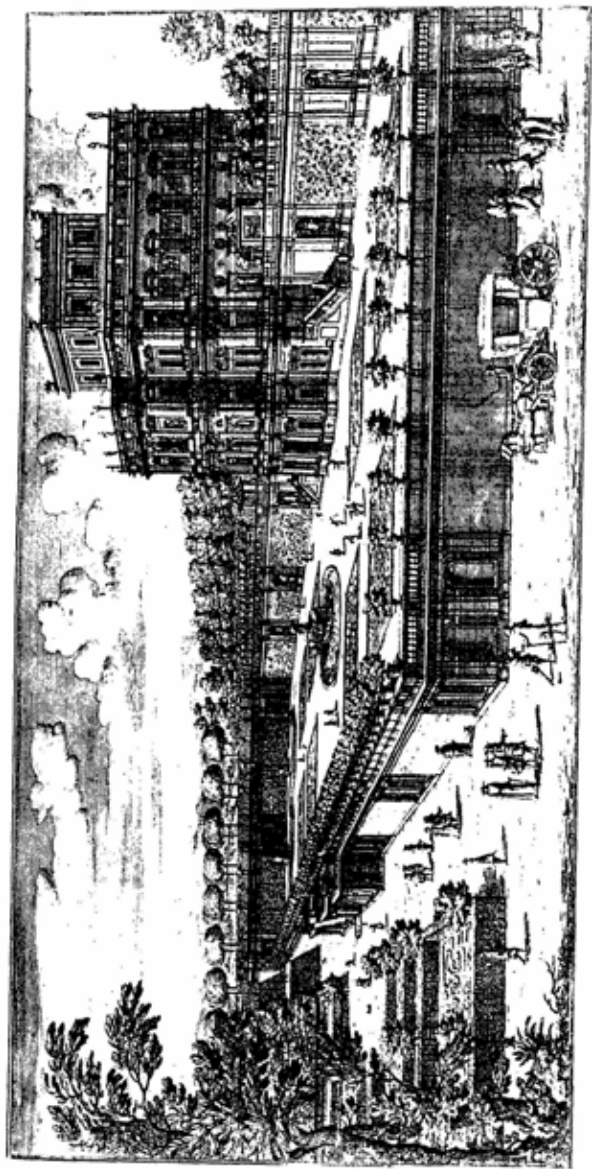
found best—which ought to be changed daily so that it does not become sour ; or (ii), place the seeds in a nutshell filled with sugar and earth, or inside a decayed fig, and bury them thus ; or (iii), press the juice out of the [sour] orange, then fill the latter with sugar, and bury it.”¹⁴⁴ But his instructions as to the manner of using citrus trees in garden architecture are sound and reflect the high level to which the art of gardening had attained under the author’s Moorish teachers. He tells us how to proceed in order to clip citrus trees into various regular shapes ;¹⁴⁵ and he shares enthusiastically the general esteem in which his contemporaries held citrus trees as an element of beauty in their gardens : “as to the orange and the other trees similar to it . . . I declare that no garden can be said to be perfect that does not contain some of these trees, but principally oranges.”¹⁴⁶ What Herrera had done for the technique of citriculture, Nicolas Monardes (1493-1558), a physician of Seville, did in regard to the use of the different parts of citrus trees in medical practice, in a short dissertation entitled “*De Aurantiis*,” published in Latin, in Antwerp, in 1551.¹⁴⁷

But if the writings about citrus trees and their fruit were few in number, in the actual daily life of the people of Spain oranges, citrons, lemons, and limes continued to play the same important part as in the days of the Moors : citrus fruits were indispensable on the table, and citrus trees in the garden. Even Italian travellers, though familiar with citrus trees in their own country, are impressed by the ubiquitous character and the size of these trees in Spain. In his biography of Ferdinand I of Aragon, the Italian humanist Lorenzo Valla (c. 1406-1457) describes as follows the gardens of Valencia : “The most remarkable thing, there, are gardens not only composed entirely of citrus trees, but with walls of citrus, so that you ask yourself whether these are gardens or rooms . . . The walls are formed by the trunks of citrus trees, but they are covered with leaves so thickly that you cannot see through them, still less pass between them . . . The soil is covered with blue tiles of various designs. The heavenly dwelling-places of the blessed cannot look very

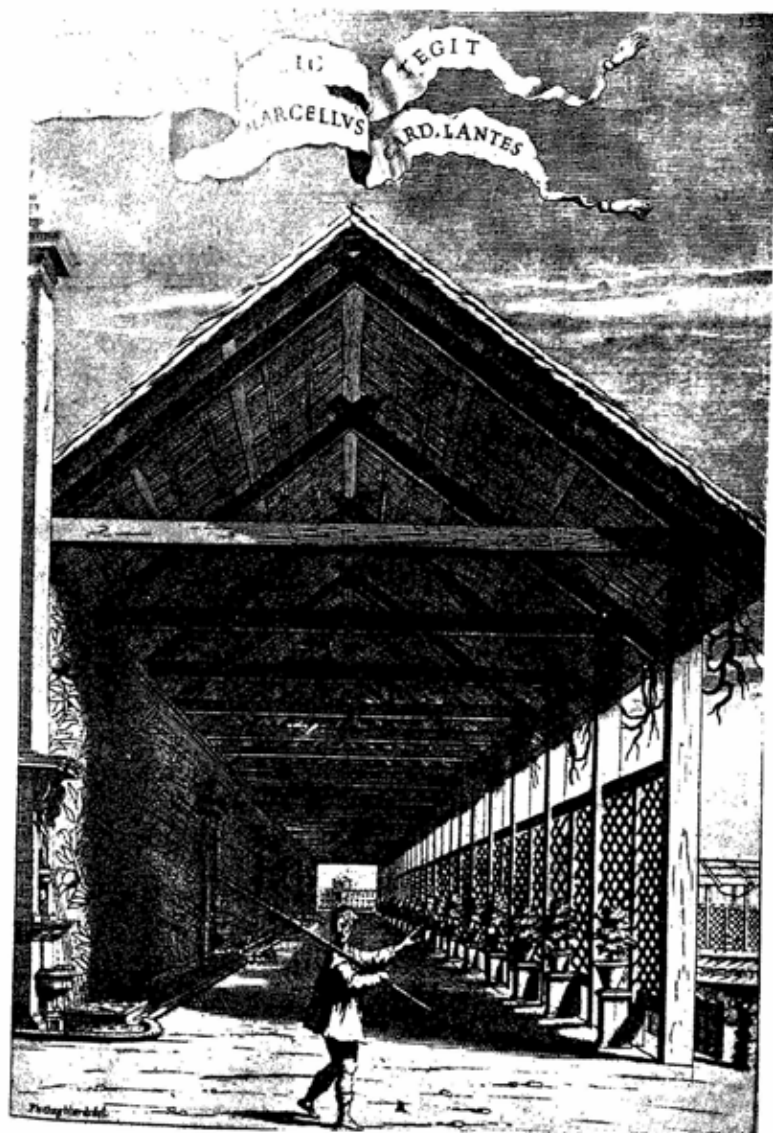
¹⁴⁴ HH, fol. 92a.¹⁴⁵ HH, fol. 92b.¹⁴⁶ HH, fol. 91b.¹⁴⁷ AW.



Frontispiece of G. de Rossi's Edition of Gio. Battista Falda's *Giardini di Roma* (1676).



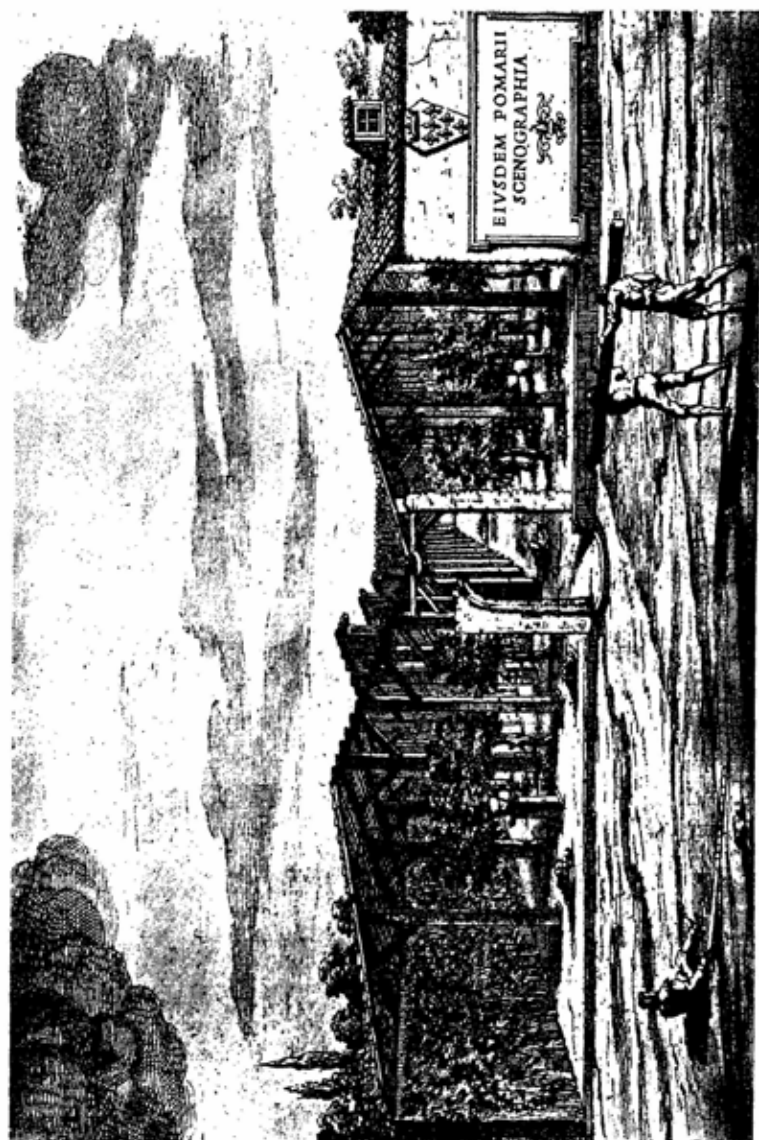
The Gardens of the Villa Pamfili, in Rome.
(From Falda's Giardini di Roma, 1676.)



Orange-House.
(From Ferrarius' Hesperides.)



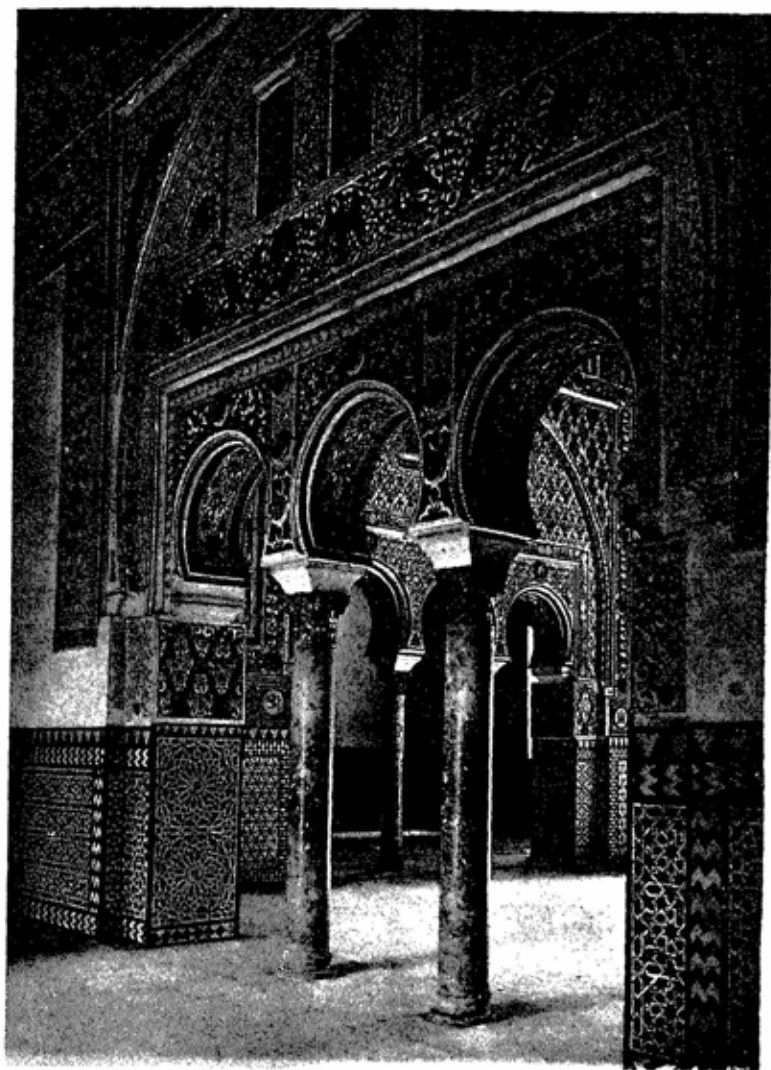
Orange-House.
(From Ferrarius' Hesperides.)



Orange-House.
(From 'Ferrarius' Hesperides.)



Orange-House of the Villa Aldobrandini at Frascati.
(From Ferrarius' *Hesperides*.)



Seville: Alcazar. *Comedor* (Dining Hall of Philip II).



Bartolomé Estéban Murillo (1617-1682): "The Gamblers."

Photo: Hanfstaengl]

(Munich, Alte Pinakothek.)

differently, . . . and in the Earthly Paradise too the first, innocent, men must have dwelt in a similar abode." ¹⁴⁸ Nearly a century later, Navagero, the Venetian Ambassador to the Court of Charles V, whose description of the Alhambra has been quoted before, is perhaps the most enthusiastic of these foreign travellers: Barcelona "is a very fine city, beautifully situated, and has a large number of very fine gardens of myrtles, oranges, and citrons . . ." ¹⁴⁹ The Convent of Guadalupe, near the Portuguese frontier, "has very fine gardens full of the most beautiful orange and citron-trees, of which there are also to be found in the village [around the convent]." ¹⁵⁰ In the neighbourhood of Seville there was a garden "called *la Huerta del Re* (the King's Garden), which belongs to the Marquess of Tarifa; . . . in this garden, as also in others of Sevilla, I saw orange-trees as high as walnuts are in our own country." ¹⁵¹ The great Spanish writers were not less appreciative of the beauty of the citrus trees than were their foreign guests. In one of the finest descriptions of a garden ever written, the dramatic poet Lope de Vega Carpio (1562-1635), the founder of the Spanish theatre, has immortalised the Abadia, a castle and park belonging to the Duke of Alba near the borders of the province of Extramadura. "The garden is divided into squares by means of walks adorned with the [orange] tree which Castille, on account of the snows of its icy winters, will not permit to grow . . . [Yet,]

There, equally in winter and in summer
Grows the orange-tree that bears the golden fruit;
And the more the mountain is white with snow
The more it prides itself upon its everlasting treasure. ¹⁵²
On the farther side, along the shining river,
There are lanes clothed with orange-trees
And portals ingeniously wrought of them. ¹⁵³

The reference is obviously to walks bordered by hedges of orange-trees clipped into regular shapes, and to pergolas covered with the branches of lemon or citron-trees; for the branches of the orange-tree do not lend themselves easily to trailing of any sort.

¹⁴⁸ PG, Book III, Ch. iii.

¹⁴⁹ LD, p. 3.

¹⁵⁰ LD, p. 12.

¹⁵¹ LD, p. 15.

¹⁵² JQ, p. 453 (stanzas 8 and 9).

¹⁵³ JQ, p. 454 (stanza 41).

In lavishing fortunes upon his orange gardens at the Abadia, the Duke of Alba was only following the example of his sovereign Philip II, and of the latter's father Charles V, both of whom were very fond of gardens generally, and of citrus trees in particular. The court of red unglazed tiles, which surrounds the charming pavilion which Charles V built for himself in the gardens of the Alcazar at Seville, is studded with a large number of small circular beds edged with coloured tiles, and into which are set orange-trees carefully clipped into spherical form. The pavilion itself is treated in Polychrome tiles; its ceiling is one of those typical Moorish wooden domes which the Spaniards to this day call *media naranja*, or half-orange. As an enthusiastic traveller has written, "when thick with fruit nothing could be more highly decorative than the golden green spotting in conjunction with the coloured tiles."¹⁵⁴ When after a long and eventful reign the Emperor, seriously ill and tired of reigning, abdicated in favour of his son—Philip II—and left the Court for ever, he chose as a place of retreat San Yuste, a convent of those Hieronymite monks whose establishments all over Spain were famous for their fine gardens containing large numbers of orange and citron-trees.¹⁵⁵ There, at San Yuste, he ordered a modest home to be built for him on the southern slope of the hill crowned by the monastery, because he had been told that that was the part of the property where the orange-trees were most numerous. As this new house at San Yuste did not progress as fast as the impatience of the old monarch would have it, he meanwhile established himself at the Count of Oropesa's beautiful castle of Jarandilla, in an apartment which—as the emperor's majordomo Quijada reported to the Secretary of State, Vasquez, on November 15, 1556—had immediately below it "a garden whence rises the scent of orange and citron-trees and other flowers."¹⁵⁶ Five days later Quijada writes again and his letter echoes the emperor's profound disappointment at having learned that "at the convent (San Yuste) . . . it appears that there is no cultivable land, and that the orange and lemon-trees are much less in number than people pretended."¹⁵⁷

¹⁵⁴ DP, p. 207.¹⁵⁶ KP, p. 159.¹⁵⁵ KP, p. 61.¹⁵⁷ OC, Book I, p. 190.

And when at last he moves into his own home at San Yuste, the emperor, to make up for the insufficient number of his favourite trees, converts his two large covered terraces into gardens mainly of citrus trees; so that, as a contemporary visitor writes, his apartments are "at last entirely surrounded by orange and citron-trees whose branches actually creep through the windows of the rooms, cheering him with their scent, with their colour and with their green."¹⁵⁸

Philip II inherited from his father the latter's passion for gardening, his love of flowers, and in particular his partiality for orange-trees and their fruit. In his *Comedor*, or dining room, at the Alcazar, the broad lintel above the triple arch which separates that room from the adjoining Hall of the Ambassadors is decorated with a frieze, in gold on a white background, showing the heraldic eagle of the Hapsburgs amidst branches and fruit of the orange-tree (Plate LXXV). His letters to his two daughters, written from Portugal during the years 1581-1583 which he spent in the conquest of that country and the organization of his rule there, are full of expressions of admiration for the beautiful gardens of Lisbon; and when he is presented, in that city, with a "sweet lime" of exceptional size, he carefully packs it up and sends it to the young princesses: "The other day I was given what is contained in this box, being told that it was a sweet lime; and, although I do not believe that it is anything else than a lemon, I longed to send it to you because, should it be a sweet lime then I never saw one so big. I do not know whether it will arrive sound; if so, taste it and let me know the truth about it, for I cannot believe that a sweet lime could be of such a size; that is why I should be pleased to be enlightened by you. The little lemon which is sent with it has been added only in order to fill the box. I also send you roses and some orange-blossoms, that you may see that there are some here. Every day the Calabrese brings me bouquets of these two flowers. . . ."¹⁵⁹

The poetical and dramatic literature of the time contains numerous references to the use of citrus fruits as a condiment, and to that of the foliage for purposes of decoration.

Melon Eaters " and "Gamblers " (Plate LXXVI), both at the *Alte Pinakothek* Museum of Munich.¹⁶³ The purely decorative art of Spain also made citrus fruits its own, as witness the panels of "Cordovan leather " that cover the sixteenth century chairs (Catalogue Nos. B.628 and B.629) of the Musée de Cluny in Paris, which have for their principal motif cornucopiae—horns of plenty—filled with grapes, pomegranates, and citrons.

¹⁶³ Catalogue Nos. 487 and 597.

CHAPTER VII.

CITRICULTURE IN NON-MEDITERRANEAN EUROPE.

FRANCE.

It is said that the "Golden Islands" (Iles d'Or) near Hyères in southern France owe their picturesque name to the fact that in the Middle Ages they as well as the neighbouring coastal districts were covered with extensive orange groves. To-day, it is true, hardly any orange-trees are to be found either on the islands or in the neighbourhood, but there was a time when citriculture was an important factor in the economic life of the district. The chronicler Abel Jouan, who published in 1566 a narrative of the Journey which the King of France, Charles IX, had just then made through Provence, described the pretty little town of Cuers as marking "the beginning of oranges, and there is great abundance of them," whilst "around Hyères there is such great abundance of oranges, and palms, and pepper trees, and others which bear cotton, that they are like a forest."¹ Not many years ago, Hyères still boasted the proud possession of a *Jardin du Roi* (The King's garden) which is believed to have been planted by, or for, Henry IV.

In 1573, Catherina de Medici gave a banquet in honour of a Polish embassy which had come to Paris to offer the crown of Poland to the Duke of Anjou. "After supper—relates Brantôme—a ballet was performed by sixteen of the most beautiful ladies and damsels of the Court, representing the sixteen provinces of France, after which they presented the king, the queen, the newly elected king of Poland, Monsieur his brother, the king and queen of Navarre, and several of the French and Polish noblemen present, each with a golden plaque as big as the palm of one's hand, beautifully enamelled and of exquisite workmanship, on which were engraved the fruits and specialties of each province, that is, those which each province

¹ IJ, pp. 23-24.

produced in greatest abundance, namely: Provence, citrons and oranges; Champagne, wheat; Burgundy, wines; Guyenne, soldiers; . . . and, so on, for all other provinces."² Thus, by the middle of the sixteenth century, citrons and oranges were already considered amongst the principal products of the soil in Southern France. If lemons are not specifically mentioned, we nevertheless know that they were grown in quantity, since during the latter part of the seventeenth and the whole of the eighteenth century the city of Menton owned a "Lemon Council" (*le Magistrat des Citrons*), composed of 27 members, and entrusted with the task of supervising the harvesting and selling of the important lemon crop of the surrounding district.³

It may be taken for granted that commercial citriculture along the Mediterranean shore of France must be about as ancient as on the neighbouring Italian Riviera: both regions were equally early, and in an equal degree, open to all the oriental influences carried in the wake of religious pilgrimages or commercial enterprise. But as far as the use of citrus trees as an element of decoration in garden architecture was concerned, it may be assumed as reasonably certain that it was Italy that set the fashion which, first copied by France, was in due course to spread to the remotest, and even to the coldest, places in Europe.

In the Accounts of the Household of Humbert II, Dauphin of the County of Viennois in Southern France, it is recorded that that prince, during a short stay at Nice on his way home from Naples in the year 1336, paid a certain sum of money for the purchase and cost of transplanting of twenty orange-trees, *pro arboribus viginti de plantis arangiorum ad plantandum*.⁴ Yet, it was not until nearly two centuries later that the fashion of keeping orange or citron-trees was adopted for good by the princes and the nobility of France; it probably started as the result of the Italian campaigns of Charles VIII and

² DF, VII, pp. 371-372. The "plaques" described by Brantôme are strongly reminiscent of the series of three pieces of sixteenth century black and white Limoges enamels, in the Victoria and Albert Museum (London) by the Master I.P. (Jean Poillevé?); they represent "A Triumphal Procession," in which figure prominently several orange trees bearing golden fruit.

³ NU, Introduction (Vol. I, p. 147).

⁴ PE, Vol. II, p. 279.

Francis I, which for the first time brought the French into contact with the intellectual and material splendour of the Italian Renaissance.

It was in 1495 that the romantically disposed young king of France, Charles VIII, set out on that famous expedition to Italy which started as a triumphal procession and ended in complete disaster for the French arms; but the enthusiasm which the palaces and gardens of Italy kindled in the minds of the youthful king and his courtiers was so great that in their retreat homewards they took with them a large number of Italian artists who were to transform the old castles of France or to create new ones in the Italian style. "You can hardly imagine," wrote the king himself from Naples, on March 28, 1495, to his brother the Duke of Bourbonnais, "what beautiful gardens I own in this town, for, on my faith, it seems as if they lacked only Adam and Eve to make of them an earthly Paradise, so fine are they and full of all good and curious things, as I hope to tell you as soon as we meet again."⁵ The first French castle to be transformed according to Italian patterns was the king's own Château at Amboise, where Pasello da Mercogliano, a priest and skilful gardener whom Charles had brought with him from Naples, created the first "orangery" on record in France: an event which was considered of such importance in the history of French gardening that for several centuries thereafter a branch from the orange-trees of Amboise used to be presented annually to the Kings of France.⁶

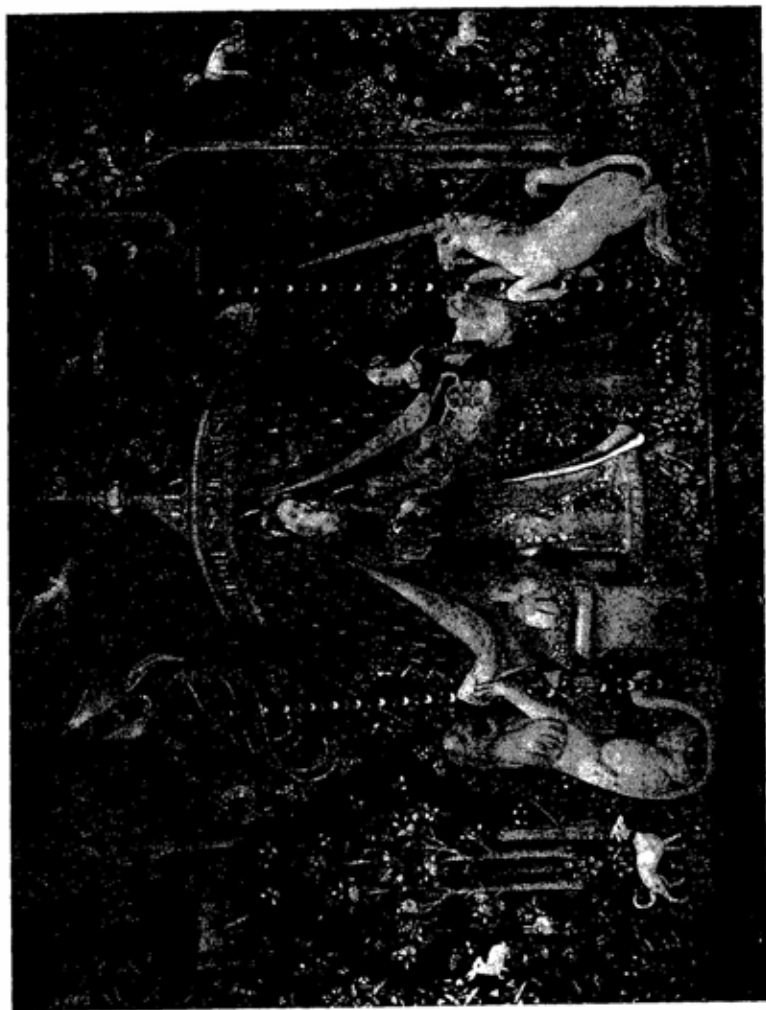
The example set at Amboise was soon followed in other royal castles and in those of many members of the nobility. At the *Bibliothèque Nationale* in Paris there is preserved the admirable Book of Hours of Anne of Bretagne, the queen of Charles VIII and, after his death in 1498, of his successor Louis XII; the marginal space surrounding the manuscript text is filled with precious miniature paintings by French artists of the time, representing the various plants grown in the queen's garden at the Château of Blois, and among these illustrations there is one depicting a branch of the sour orange-tree.⁷

To the later fifteenth century belongs also the remark-

⁵ EC, Vol. IV, pp. 187-188.

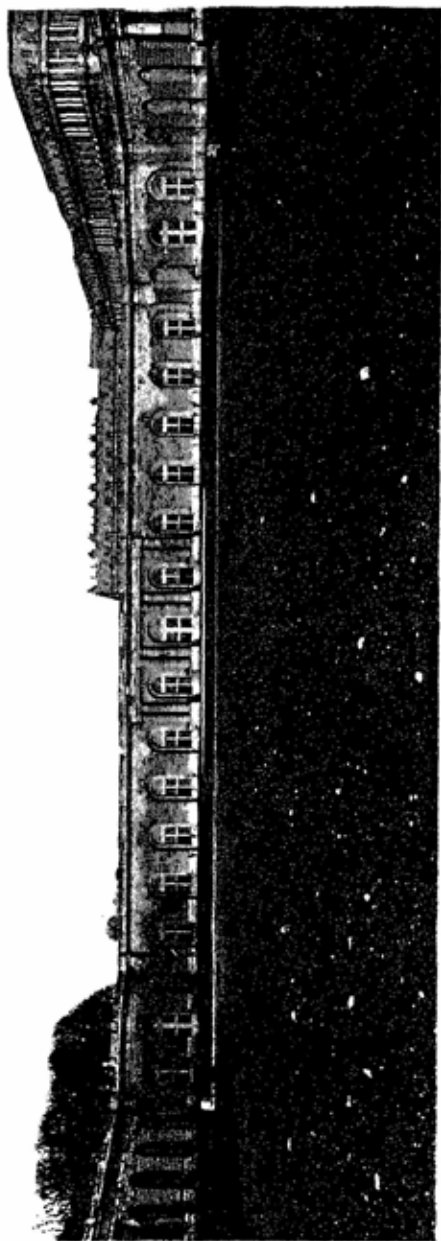
⁶ GU, Vol. II, p. 5.

⁷ JO, fol. 337.



"La Dame à la Licorne" (French Tapestry, c. A.D. 1490).

(Musée Cluny, Paris.)



The *Orangerie* of Louis XIV at Versailles.
Built by Mansart (c. 1682).

Photo : Pétermin]

able series of six French tapestries known as *La Dame à la Licorne* (i.e. the Lady with the Unicorn), at the Cluny Museum in Paris (Plate LXXVII). Originally they belonged to the castle of Boussac, and were apparently woven in honour of the bride of a member of the Boussac family. Whilst the allegorical meaning of the picture has never been satisfactorily explained, it is obvious that all the scenes are laid in a garden in whose lay-out orange-trees play a prominent part. Our illustration reproduces the best known of the six panels of the series: a group of orange-trees, heavy with blossoms and fruit, is seen on the right, behind the unicorn.

The wars between Francis I and the Emperor Charles V, with Italy and southern France as their chief battlefields, once again brought large numbers of French noblemen into contact with the art, pictorial and architectural, of the Renaissance in Italy, whilst Francis' captivity in Spain and his second marriage with Eleanor of Portugal taught him to appreciate also the charm of Spanish garden-craft, inherited from the Moors. Amongst the orange-trees of the Tuileries Gardens, in Paris, there are several of which it is claimed that they date from Francis' reign. That monarch's name is also connected with an orange-tree than which no other ever had a more romantic or more chequered career. In the year 1421 the Queen of Navarre, at that time an independent state in northern Spain ruled by French princes, gave her gardener some orange seeds to be sown in ordinary earthen pots. One of these seeds gave rise to a tree which, after having been for several generations the pride of the royal gardens at Pampeluna the capital of Navarre, eventually passed, together with other heirlooms, into the possession of the French royal family of the Bourbons who kept it in a conservatory at their castle of Chantilly. In 1523, the Constable of Bourbon having revolted and taken sides with the Emperor Charles against his kinsman and sovereign Francis I, the latter confiscated Chantilly together with other properties of the Constable including the already famous orange-tree, which in 1532 was transferred to the king's newly built castle at Fontainebleau; the huge sum of 300 pieces of silver was spent on transport alone. A century and a half later, Louis XIV carried the tree—known as the "Grand Bourbon," "Grand Connétable," or "François Ier"—to

Versailles, where it continued to blossom and to bear fruit until its death in 1894.

The marriage, in 1533, of Francis I's son Henry (Henry II, 1547-1559) with Catherine de Medici led to the renewed predominance of Italian fashions in France. Of all the arts, architecture was perhaps most profoundly affected by these influences: kings, princes, noblemen took to building castles which were no more the grey and uninviting fortresses designed for defence only as of yore, but noble-fronted and elaborately decorated palaces, open to sun and air, and surrounded by gardens copied on or inspired by the most celebrated Italian models. The king himself set the fashion with the magnificent castle of Anet, the masterpiece of Philibert Delorme, the greatest French architect of the age. It was built in 1552, not for the queen, but for Henry II's famous mistress Diane de Poitiers, Duchess of Valentinois; its most admired feature was the graceful little orange-house, now ruined, of which another architect and writer, Androuet du Cerceau, gave a picture in his book on "The Most Excellent Buildings of France."⁸ The wealthier members of the aristocracy followed the lead given by the monarch. The poet Ronsard (about 1584) in a eulogy of the King's Secretary of State, Monsieur de Neufville, Seigneur de Villeroy, extols the beauties of that nobleman's chateau at Conflans near Paris, its park, its vineyard, its river, and, especially its orange-garden,

*Ta forêt d'orangers, dont la perruque verte
De cheveux éternels en tous temps est couverte,
Et toujours son fruit d'or de ses feuilles défend
Comme une mère fait de ses bras son enfant.*⁹

In one of his celebrated "Sonnetts for Helen," Ronsard acknowledges a gift of cypresses and green orange-trees, apparently from the lady's garden;¹⁰ and the orange-trees of Joakim's park in Pierre Reymond's representations of "Susanna and the Elders" on painted Limoges enamel dishes of the late sixteenth century, now in the Galerie d'Apollon of the Louvre,¹¹ are obviously painted from nature.

But it was the seventeenth century that brought the

⁸ EA, Vol. II, p. 6.

¹⁰ NA, Vol. II, p. 472.

⁹ NA, Vol. II, p. 461.

¹¹ Catalogue Nos. 597 and 599.

orange-tree definitely into its own as the most highly esteemed element in French garden architecture. In the same year (1600) in which Henry IV married Marie de Medici, Olivier de Serres published in Paris the first edition—dedicated to the King himself—of his "*Théâtre d'Agriculture et Ménage des Champs*," which became for several centuries the classical treatise on French agriculture, horticulture, and animal husbandry. It was the first book, in the French language, not only to deal exhaustively with the technical aspects of agriculture, but to depict all the aesthetic pleasures and commercial advantages to be derived from it, and in particular to encourage both nobleman and wealthy burgher to keep orange-trees. "Here are," writes Olivier de Serres, "plants and fruits which are very helpful towards embellishing the garden, and which intelligent people will make use of if they wish to make their homes really beautiful and pleasant. Nor will they find it difficult to do so, since oranges, citrons, lemons and other suchlike valuable fruit-trees flourish in any climate, provided one is ready to incur the necessary expenditure. To begin with, it will, however, be necessary to make up one's mind as to the purpose for which it is desired to grow these rare plants. . . . If for profit, then economy in expenditure is essential, and this is possible only in the southern part of this realm, near the Mediterranean, that is, in certain districts of Provence and Languedoc, owing to the fact that a warm climate is essential to their subsistence. But, if one desires to grow them for pleasure only, with money it will be possible to do so anywhere, since there is neither soil nor climate, however difficult or adverse they may be, that will not yield to artifice. . . . All these trees are very delicate, being extremely fearful of cold. That is why, to keep them alive, more artifice is required the further one gets away from the regions where time has naturalized them. Firstly, to keep them protected from the effects of cold which is so harmful to them, one will have to take care to keep them under cover during the winter months; in more northerly parts, it will even be necessary to heat the buildings where they are kept. . . . But, as such things in most cases involve considerable expense, they can as a rule be indulged in only by the great, as is seen on the part of princes and noblemen in France, in Germany, and in other countries,

where, not without astonishment, one sees these precious fruits grow and ripen in spite of adverse climatic conditions. Such is the case at Heidelberg, in the garden of the palace of the Elector Palatine. There, at the approach of winter, a high wooden enclosure—pierced with large windows to allow the sun to enter and cheer the trees—is built up around them, with a light wooden roof for protection; stoves are kept burning inside. Thus the trees are kept throughout the winter. When spring returns at last, and all danger of frosts has definitely disappeared, the roof and the wooden enclosure are taken to pieces, and the trees are once more abandoned freely to the influence of summer.”¹² But, “to remove and to set up again, each year, these enclosures and roofs is an expensive matter. And so, necessity—the mother of invention—led to the discovery of the art of raising the precious trees in boxes, a thing to which these delicate plants lend themselves so easily that it almost seems as if, in order to satisfy man, they make themselves at home, wherever they may be placed, by drawing their roots together until they manage to lodge them in the narrowest space. Grown in such boxes, the trees can be easily moved from place to place, according to weather conditions and to their owners’ pleasure; instead of having to be accommodated each year in temporary protective structures, they are now provided, once for all, with an appropriate shelter in the shape of permanent buildings whither they are taken during the winter, being easily moved about thanks to the presence of small wheels attached to the lower part of the boxes . . . There are no definite rules in regard to the shape or size of these boxes, [but] if one wishes to obtain big trees, it will be necessary to have the boxes big as well, since it is obvious that the roots of big trees require more space and more food than those of small trees. Always according to the required size of trees one aims at, shall the box be chosen, big, small, or medium. Thus can one see them grow and fructify in earthen pots and in small wooden vessels, that are so light that a man can carry them about, in and out of houses, galleries, halls, windows. The care of trees thus grown in boxes does hardly differ from that of those that

¹² NU, Vol. II, pp. 402-403.

are grown in the open, except that once every year part of the earth in the box will have to be removed and replaced by fresh and fertile earth. . . . All boxes or other such containers, whether big or small, should have a pierced bottom to allow for the draining away of any surplus water which the soil might be unable to retain at the time of watering the trees. The trees will also have to be pruned from time to time so that they be kept at low size.¹³ It is impossible—so concludes Olivier de Serres—to describe adequately the great beauty of these precious plants, due to the everlasting bright green colour of their foliage and the good qualities of their fruit. . . . It is, in truth, a sport for princes and noblemen to grow these excellent trees in a climate that is contrary to their nature: a luxury, therefore, that is more easily admired than copied.”¹⁴

Of the practical value of Olivier de Serres' instructions for citrus growers one cannot speak highly enough; many of the rules laid down by him for the use of his contemporaries still hold good to-day. “As the seeds of these fruits take a long time to develop into trees, one generally prefers to make use of the shoots which grow on the foot of old trees. [Cuttings from] their branches also strike roots quite easily, except in the case of the orange-tree, which, by reason of the hardness of its wood, only seldom and with great difficulty becomes rooted; cuttings from the Poncile (shaddock), on the contrary, get rooted very easily, in fact more easily than those of any other citrus tree¹⁵ . . . Citrus trees will not produce fruit of good shape and of pleasant taste unless they are grafted. Orange, citron, lemon, and shaddock trees cannot be grafted on other trees than those of their own species: that is where those are wrong who try to graft them on to laurel, mulberry, apple, pear or pomegranate, on which they never thrive; neither can they themselves be used as stock on which to graft other fruits. As between themselves, the ‘cedriac,’ as it is called in Provence (apparently a sweet lime), is the one best adapted to receive the buds of the others, thanks to its thick and soft bark. All other kinds, without distinction,

¹³ NU, Vol. II, p. 408.

¹⁴ NU, Vol. II, p. 409.

¹⁵ NU, Vol. II, p. 403.

take easily on it, fructify very well, and are long-lived; the orange, in particular, develops marvellously well on it, bearing, as early as two years after budding, fruit that is both beautiful and juicy. The method mostly in use for grafting all these trees, is budding."¹⁶

Henry IV, to whom de Serres' treatise is dedicated, built—obviously guided by the advice of that learned agronomist—at the Tuileries in Paris an "orangerie" which however was pulled down under Louis XIV, when Lenôtre changed the plan of that famous garden and gave it the beautiful outlay that is universally admired to this day. After Henry's death, in 1615, the widowed queen, Marie de Medici, wishing to surround herself once more with an atmosphere reminiscent of her native Italy, her architect Salomon de Brosse created for her the castle—now the Museum—and gardens of the Luxembourg, after the model of her own home in Florence: the Piazza Pitti and the Boboli gardens. Her example was at once imitated by her life-long rival Cardinal Richelieu, who adorned his newly-built castle at Rueil with a lemon-house, to which John Evelyn refers admiringly in his *Diary* as "the Citronière, which is a noble conserve of all those rarities."¹⁷ No doubt, not only among the aristocracy, but amongst the wealthy middle-classes as well, the habit of keeping orange-trees in numbers commensurate with the space and the means available, must have rapidly spread, since otherwise it would be difficult to account for the fact that, when Evelyn passed through Paris in February 1644, he found young orange-trees being commonly sold in the Market of the Isle du Palais, "the every day's market for all sorts of provisions, especially bread, herbs, flowers, orange-trees, choice shrubs."¹⁸ Two years previously, Corneille, in his comedy "*Le Menteur*," had described a feast on the river, with a banquet served on a barge covered, for shade, with a canopy of branches decorated with bunches of *jasmin*, *pomegranate*, and orange blossoms.¹⁹

Never has the growing of citrus trees in northern countries and their use for decorative purposes been practised on such a lavish scale and with such consummate art as at the Court of Louis XIV. At Fontainebleau he converted

¹⁶ NU, Vol. II, p. 406.

¹⁷ FR, Vol. I, p. 55 (February 1644).

¹⁸ FR, Vol. I, p. 50.

¹⁹ EL, Act I, Scene 5 (p. 403).

the *Volière* of Henry IV into an "orangerie." Next, having taken possession of Vaux-le-Vicomte—where his Minister of Finance, Fouquet, had lavished millions on a castle by Le Vau and gardens by Lenôtre, and a fortune on a collection of 190 orange-trees each over a century old—the king ordered the same architect, Le Vau, to build a conservatory in the grounds of Louis XIII's hunting-lodge of Versailles, and had Fouquet's trees transported there by Fouquet's own gardener, La Quintinye, who had also passed into the king's service. A few years later, when Louis XIII's hunting lodge was replaced by the great palace of Versailles, Le Vau's conservatory was pulled down, and in its place Mansart—the designer of the new palace—set up the giant "Orangerie," one of the most perfect examples of seventeenth century French architecture (Plate LXXVIII). Its central section, nearly 500 ft. long and some 40 ft. wide, is flanked at right angles by two wings each about 350 ft. in length. During the winter season this enormous hall is entirely filled with orange-trees, which, with the advent of spring, were transferred into the gardens and set there amongst the bushes of roses, honeysuckle, and jasmin, kept just high enough to hide the boxes and thus to create the illusion as if the trees were actually growing in the soil. Louis XIV had a passion for orange-trees. "Whenever the king gave in his gardens one of those brilliant parties which contributed almost as much to his fame amongst foreign nations as his conquests, orange-trees were used to decorate the porticoes, the halls of green, and the other similar embellishments. Orange-trees were also amongst the principal ornaments of the Great Gallery of the Palace of Versailles: along each of the sections of wall which separated the windows stood four orange-trees in huge silver boxes resting on a silver base. The same arrangement was to be seen in the Billiard Hall. Even in his own apartments did the king insist on keeping these trees; and his gardeners, in order to satisfy his passion in this regard, had even discovered the secret of how to obtain orange blossoms all the year round. They would select for the purpose a few trees which, by having all water withheld from them, were left to dry up; when they had shed their leaves, a special treatment was applied which resulted in reviving them, so that in a short time they

brought forth new leaves and blossoms. Every fortnight, another series of trees was made to undergo the same treatment, and so the king was kept provided with fresh orange blossoms all the year round."²⁰ For he liked to have his dinner-table adorned with flowers, and in particular with orange blossoms; thus, at the banquet which he gave in January 1680 on the occasion of the wedding of his natural daughter, Mademoiselle de Blois, with the Prince de Conti, the only decoration to be seen on the 54 feet long table were nineteen baskets, some of silver and the others of copper gilt, filled with anemones, hyacinths, Spanish jasmin, and orange blossoms.²¹ And in places too dark or passages too narrow to allow for live trees to be placed there, or in or near bedrooms where the scent of the blossoms was likely to cause discomfort, pictures of orange-trees were used as an alternative; at Fontainebleau, in the ante-room leading to the apartments of Louis XIV's morganatic wife Madame de Maintenon, exactly opposite the door opening on that lady's bedroom, the wall is adorned with an admirable panel of Beauvais tapestry—the most valuable piece of tapestry in the castle—representing bunches of grapes, flowers, and a blossoming orange-tree.

Madeleine de Scudéry, in "La Promenade de Versailles" (1669) dedicated to the king, has given eloquent expression to the pleasure which visitors to Versailles derived from the sight of the beautiful trees.²² The same year, the poet Lafontaine—in a kind of prologue to his poem "Les Amours de Psyché et de Cupidon"—recalls how, some months previously, together with his friends Racine, Boileau, and Molière, he had gone to Versailles to admire the new buildings which were then just being completed, and how, carried away by the beauty of the orange-trees, he had there and then improvised the following verses:—²³

*Orangers, arbres que j'adore,
Que vos parfums me semblent doux !
Est-il, dans l'empire de Flore
Rien d'agréable comme vous ?*

²⁰ JC, Vol. I, p. 247.

²² NS, p. 84.

²¹ JC, Vol. III, pp. 286-287.

²³ IP, pp. 21-22.

*Vos fruits aux écorces solides
Sont un véritable trésor ;
Et le jardin des Hespérides
N'avait point d'autres pommes d'or.*

*Lorsque votre automne s'avance,
On voit encor votre printemps :
L'espoir avec la jouissance
Loge chez vous en même temps.*

*Vos fleurs ont embaumé tout l'air que je respire.
Toujours un aimable zéphyre
Autour de vous se va jouant.*

*Vous êtes nains ; mais tel arbre géant,
Qui déclare au soleil la guerre,
Ne vous vaut pas,
Bien qu'il couvre un arpent de terre
Avec ses bras.*

Even whilst Versailles was being rebuilt, the architect Mansart and the gardener Lenôtre had, in 1674, started work on the château of Clagny, a present from Louis XIV to his famous mistress, Madame de Montespan. On approving the plans, on 12th June, 1674, the king had added that "Madame de Montespan greatly desires the garden to be so far advanced this autumn that it may be possible to plant the trees." When, little more than a year later, in August, 1675, Madame de Sévigné paid a visit to Clagny, she could write to her daughter: "We have been to Clagny ; what shall I tell you? It is the palace of Armida. The buildings rise speedily ; the gardens are finished . . . There is a whole forest of orange-trees in huge boxes ; one walks amongst them, through shady lanes along both sides of which, in order to hide the boxes, hedges have been provided that are all covered with tuberoses, roses, jasmin, and carnations. This is assuredly the most surprising, the most enchanted novelty that could be imagined: this forest is greatly liked."²⁴

Like the king their master, the noblemen of the Court surrounded themselves with orange-trees and orange blossoms on every suitable occasion. The same Madame

²⁴ NW, Vol. II, p. 32.

de Sévigné, reporting on the wedding of the daughter of the minister Louvois (November 24th, 1679), writes that "spring has been brought back: everywhere orange-trees in bloom, and boxes filled with orange-blossoms."²⁵ In connection with another party, given on the 9th of February, 1680, on the occasion of a christening at the Prince de Condé's, she exclaims: "What a meal! And then a comedy, but what a comedy, . . . good dancers from the Opera! . . . A theatre built by the fairies, recesses, orange-trees heavy with blossoms and fruit."²⁶ Soon the fashion became general. Amongst the innumerable balls, garden parties, magnificent dinners, given by noblemen during the last thirty years of Louis XIV's reign, and of which descriptions have been preserved in the writings of the period, there is perhaps not one where orange-trees are not found to have been used for ornament.²⁷

And, since whoever could afford the expense endeavoured to grow oranges, citrons, or lemons, a demand arose for books of instruction in the technique of that particular branch of horticulture. Two such treatises were issued by the publisher Charles de Sercy, in Paris, in 1680 and in 1692; both were published anonymously, but it is known that the earlier one was written by J. Morin,²⁸ the later one by Ballon, "Director of all the King's Gardens" (*Directeur de tous les Jardins du Roi*).²⁹ However, the best book of the kind was one published in Amsterdam in 1692, written by M. de la Quintinye (see page 216) and entitled "*Instructions pour les Jardins Fruitiers et Potagers, avec un Traité des Orangers, suivi de Quelques Réflexions sur l'Agriculture*"; from it we learn, *inter alia*, that "each year in the months of February, March, April, and May, the Genoese merchants bring here large numbers of fairly strong and big orange and citron trees, with or without balls of earth, which they sell at quite reasonable prices."³⁰ The books just mentioned were meant to furnish practical rules of citriculture not so much for the professional gardeners as for amateur growers. How far they were instrumental in spreading the fashion of keeping citrus trees, is difficult to appraise; but by popularising the essential rules which

²⁵ NX, Vol. IV, p. 334.

²⁷ JC, Vol. I, p. 249.

²⁶ NX, Vol. V, p. 7.

²⁸ AX.

²⁹ AC.

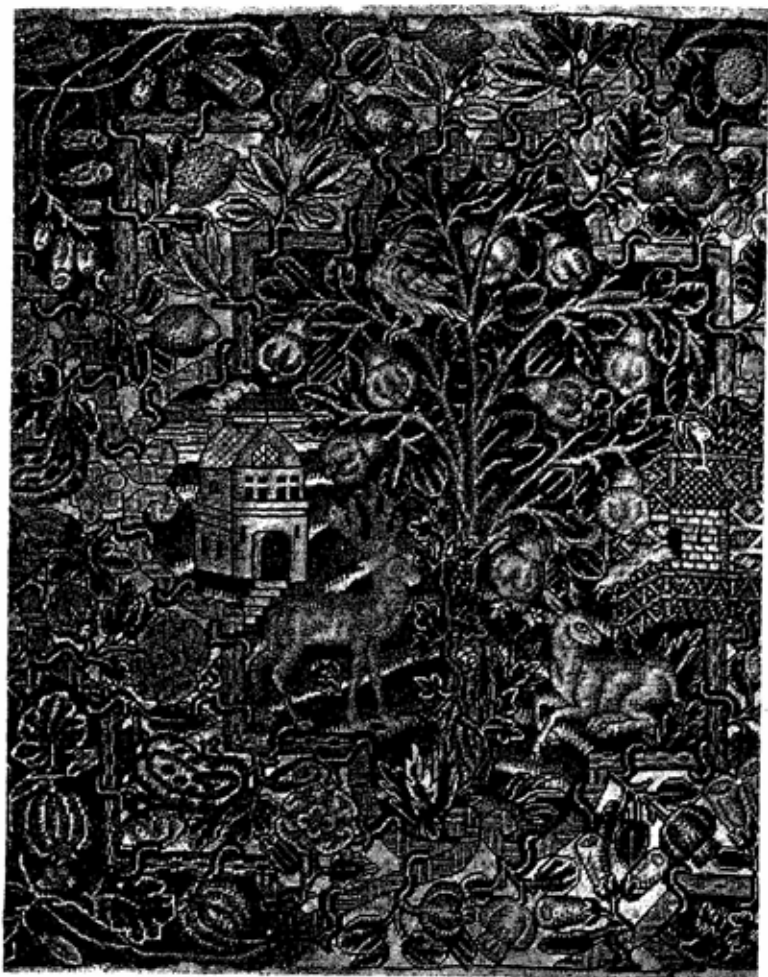
³⁰ BC, p. 257.



Boucher: Portrait of Madame de Pompadour (A.D. 1759).

Photo : H. Dixon and Son, Ltd.]

(Wallace Collection, London.)



English Petit-Point Embroidery, Sixteenth Century.

(Wools and Silks on Canvas.)

(Victoria and Albert Museum, London.)

the proper care of these plants required, they certainly helped to make it easier for wider circles to imitate successfully, and without needing to have recourse to the services of expensive gardeners, the example set by the Court and the nobility. A century or so after the creation of Versailles, Le Grand d'Aussy could write that "to-day (i.e. in 1782), the orange-tree has become the tree *par excellence* for decorative purposes ; there are few gardens, even among the middle classes, where several such trees are not grown." ⁸¹ Louis XIV's partiality for orange-trees was inherited by his successors, the Regent and Louis XV, and not less by the latter's famous mistress the Marquise de Pompadour, who, in her portrait of 1759 by Boucher—now at the Wallace Collection—proudly exhibits one of the centuries-old orange-trees of Versailles (Plate LXXIX).

For more than a century, that is from the time of its creation down to the French revolution. Versailles remained the model which all Europe endeavoured faithfully to copy in matters of art, dress, social life, manners, and pastimes. In England, Spain, and Poland, it was the French-born queens who set the fashion ; in Germany, each of the rulers of the hundreds of principalities into which that country was then cut up had no greater ambition than to turn his Court into a little Versailles with an "orangerie" copied on that of France's *Roi Soleil*. Yet, the first attempts at growing citrus fruits went, in most of these countries, back to a century and even more before the age of Louis XIV.

ENGLAND.

In England, according to the commonly accepted view, the first to rear citrus trees was Sir Francis Carew of Beddington in Surrey,⁸² who in the year 1562 is known to have introduced a few trees from France and to have planted them in his garden, where, trained against a wall and sheltered in winter by a tabernacle of boards warmed by means of stoves,⁸³ they remained alive until destroyed by the great frost of 1739-1740 ; Daniel Defoe, who visited Beddington in 1727, still wrote of them that "they

⁸¹ JC, Vol. I, pp. 249-250.

⁸² CL, II, pp. 159-160. DS, p. 165. FR, I, p. 333.

⁸³ FR, Vol. I, p. 333; II, p. 363.

continue and are indeed wonderful; they are the only Standard trees in England, and have moving houses to cover them in the winter."³⁴ Yet, citrus trees were certainly grown in England before 1562. Richard Eden, writing in 1553, confirms this implicitly by stating that "like as pepper wyll not grow in Spayne, no more wyll the Orange tree bringe foorth fruite in Englande."³⁵ But this again seems somehow too sweeping a statement; because various kinds of citrus trees actually bearing fruit are known to have figured in a pageant in London during the first half of the fifteenth century. When Henry VI, having been crowned in Paris in December, 1431, arrived in England in the following month of February, the Mayor of London, "withe alle the craftes of London, clad alle in white," organized in his honour a pageant, devised by Lydgate, of which the detailed description, preserved in Lydgate's own poem "Pur le Roy," tells us that:—

"There wher eke treen (trees), withe levys (leaves) ffreshe
of hewe,

Alle tyme of yere, fulle of frutis lade,
Of colour hevenly, and ever i-liche newe,
Orengis (oranges), almondis, and the pome-garnade.
Lymons (lemons) datez, ther colors ffreshe and glade,
Pipus, quinces, blaunderelle, to disport,
And the pome-cedre (citrons) corageos to recomfort."³⁶

So, not only orange but also lemon and citron trees bore fruit, at least occasionally, in England, in the early part of the fifteenth century. About a century or so later, we meet with the first definite documentary information regarding the importation and culture of orange-trees in that country. In a letter dated March 24 and 25, 1562, Elizabeth's famous minister William Cecil, Baron Burghley, wrote to Thomas Widebank, who was then in Paris, that Sir Francis (then Mr.) Carew was going to have certain trees sent home, and "I have already an orange-tree; and if the prise be not much, I pray you procure for me a lemon, a pomegranate, and a myrt tree; and help that they may be sent home to London with Mr. Caroo's trees; and beforehand send me in writing a perfect declar-

³⁴ ES, I, p. 158.

³⁵ FK, Preface. See also HC, Vol. I, p. 83.

³⁶ JU, p. 15.

ation how they ought to be used, kept, and ordered." The answer to this letter is dated April 8, 1562, from Paris: "Sir, according to your commandment I have sent unto you by Mr. Caroo's man, with his master's trees, a lemon-tree and two myrte-trees, in two pots, which cost me both a crown, and the lemon-tree fifteen crowns, wherein, Sir, if I have more than perhaps you will at the first like, yet is the best cheap that we could get it, and better cheap than other noble men in France have bought of the same man, having paid for six trees 120 crowns. . . . Well I think this good may ensue by your buying it, that if the tree prosper . . . you will not think your money lost. If it does not prosper, it shall take away your desire of losing any more money in like sort. My Lord Ambassador and Mr. Caroo were the choosers of it." He then gives directions for the "ordering" of the trees, which were to stand out in some sheltered place during the summer, and be lifted into the house for the cold months from September until April. If the tubs were filled up with earth, the plants could remain in them "this two or three years, so heed be taken that the hoops fall not away and that the earth shed not." The lemon "hath been twice grafted, and is of four years' growth, and this year he would look for some fruit."³⁷ History does not relate how the trees imported by Lord Burghley flourished, but one of the older parts of Burghley House, a long room with many windows where the trees were sheltered for the winter, is to this day called the "Orange Court." If Lord Burghley and Sir Francis Carew did not actually introduce the first citrus trees into England, they nevertheless appear to have been instrumental in making orange-growing a fashionable pastime of the nobility. It is also in their days that citrus trees first begin to play a part in English decorative art as represented in lace work, embroidery, and wall decoration. One of the best examples is that offered by two panels of petit-point embroidery in wools and silks on canvas, originally belonging to a mansion in the Midland Counties, and now at the Victoria and Albert Museum in London (Catalogue Nos. T. 134 and T. 134a), both of which show branches of lemon-trees with fruit, trailed as creepers around a monumental wooden frame (Plate

LXXX). Six panels of English woollen embroidery from an old house in Hatton Garden, London, now in the same Victoria and Albert Museum (Nos. 517 to 522-1896), and which belong to the second half of the seventeenth century, depict animals, birds, and fruits of many kinds including pomegranates, citrons, oranges, and lemons (Plate LXXXI).

Foreign books on botany or agriculture were scanned for information as to the different kinds of citrus fruits and the way to grow them. The first of such works to be translated into English was the treatise on farming of the German agronomist Conrad Heresbach; the original, in Latin, had been published in Cologne in 1570, and the English version, by Barnabe Googe, appeared in London in 1577: "The Cytron—this term was used for *citrus* generally—called also the Median, the Persian and the Assyrian Apple . . . they are called . . . in Dutch *G(C)iternapffel Pomerancen* . . . such off them as are yellowe, and of a golden colour, they commonly call Oranges: such as are of a greenishe pale yellowe, they call Cytrols or Cytruls: those that are long, fashioned like an Egge, yf they be yellowe, are called Cytrons, yf they be greene, Lymons: yf they be very great and round like Pompeons, they call them Pomecydrons . . . It is at this day nourished both in Germany and France, and is planted in vessels full of earth, and in hotte weather is set abroad in the sunne: in colde weather set in sellers, or in hotte houses . . ." ⁸⁸ According to a contemporary Spanish pamphlet, at a banquet given at Whitehall in 1604 by James I to the Spanish Ambassador in London, the King sent the guest of honour half a dozen of oranges on a branch freshly cut from the tree, telling him "that they were the fruit of Spain transplanted to England." ⁸⁹

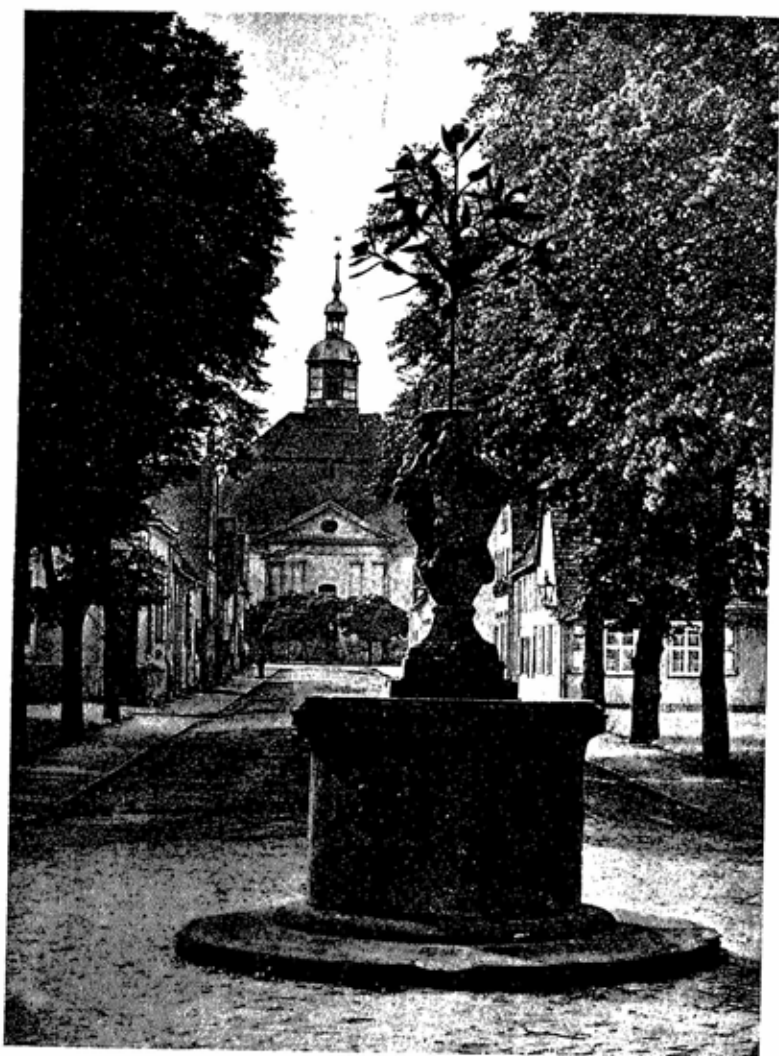
The "Orange Court" at Burghley House and other similar buildings were no more than an early kind of conservatory. Very different as yet from the modern glass structure, they were like large rooms with big windows and a stove or open fire to warm them in the coldest time, or "in default of stoves or raised hearths you must attemper the air with pans of Charcole"; as was done in France, the trees were planted in boxes, and were lifted

⁸⁸ HG, pp. 91-92. HF, pp. 165-167.

⁸⁹ MR, p. 38. See also NG, pp. 118-124.



English Woollen Embroidery, Seventeenth Century.
(Victoria and Albert Museum, London.)



Bronze Orange-Tree in Monumental Vase, Market-Place of Oranienbaum
(Anhalt).

Photo : Staatliche Bildstelle, Berlin]

out to adorn the garden during the summer months, but were "committed betimes into the conservatory."⁴⁰ By the time of Charles I there were already in existence a number of such "conservatories" or "orangeries," of which the one at Wimbledon, the favourite resort of Queen Henrietta Maria—daughter of Henry IV of France and Marie de Medici—was probably the finest example. The orange-garden at Wimbledon was laid out in four blocks, bordered with box, and divided into turfed squares with walks round them; here sixty orange-trees—eighteen of them still young, but forty-two "bearing fair and large oringes"—a lemon, and a citron tree, stood out in square tubs in the summer-time, and there was a garden house in the "Oringe Garden," where the trees were stored for the winter. When, after the execution of Charles I, a Parliamentary Commission made a survey of Wimbledon prior to selling it, the bearing orange-trees were valued at £10 a piece, the young one at £5, the lemon-tree at £20, and the citron at £10 as well.⁴¹ The diarists of the seventeenth and eighteenth centuries mention orange-trees in many English gardens: John Evelyn describes the orangeries at Lord Sunderland's at Althorpe near Northampton,⁴² at Lord Arlington's at Euston,⁴³ at Sir Robert Clayton's at Marden,⁴⁴ at the Duke of Lauderdale's at Ham,⁴⁵ at the Countess of Bristol's at Chelsea,⁴⁶ at Sir Henry Capell's at Kew,⁴⁷ at Lord Clarendon's at Swallowfield,⁴⁸ and in September, 1679, he mentions, not without pride, having given "China oranges off my own trees" to two friends who had come to dine with him; ⁴⁹ Samuel Pepys speaks of the orange-trees in the garden of Robert Greville, Lord Brooke, at Hackney,⁵⁰ and of those in "the Physique Garden in St. James' Parke."⁵¹ Celia Fiennes, in 1697, writes with admiration of the "oring and Lemon trees in Rows with fruit and flowers at once and some ripe" at Lady Brooks' seat in Wiltshire; ⁵² and Sir William Temple—the author of "Upon the Gardens of Epicurus, or of Gardening in the Year 1685"—speaks of his own orange-trees "as laden

⁴⁰ CA, pp. 175-176.⁴¹ CA, pp. 317-319. ⁴² FR, II, p. 104.⁴³ FR, II, p. 116.⁴⁴ FR, II, p. 119.⁴⁵ FR, II, p. 126.⁴⁶ FR, II, p. 132.⁴⁷ FR, II, pp. 193 and 275.⁴⁸ FR, II, p. 243.⁴⁹ FR, II, p. 139.⁵⁰ LW, V, p. 343.⁵¹ LW, IV, p. 113.⁵² FW, p. 46.

with flowers as any can well be, as full of fruit as I suffer or desire them, and as well tasted as are commonly brought over, except the best sorts of Sevil and Portugal."⁵³ It was in John Rea's "*Flora, Ceres and Pomona*"⁵⁴ and in Evelyn's translation of de la Quintinye's French treatise⁵⁵ that English amateurs and gardeners learned the art of growing citrus trees.

In Benjamin Disraeli's novel "*The Young Duke*," written in 1829, we are told that, in preparation for a supper at the hero's house in London, waggons of orange-trees were sent up from his Villa at Twickenham.⁵⁶ Better still, the first European country to grow the small, loose-skinned mandarin orange was England; the first mandarin tree was brought thither from China in 1805, and it was from England that the tree spread, first to Malta and then to Sicily and to continental Italy.⁵⁷

GERMANY.

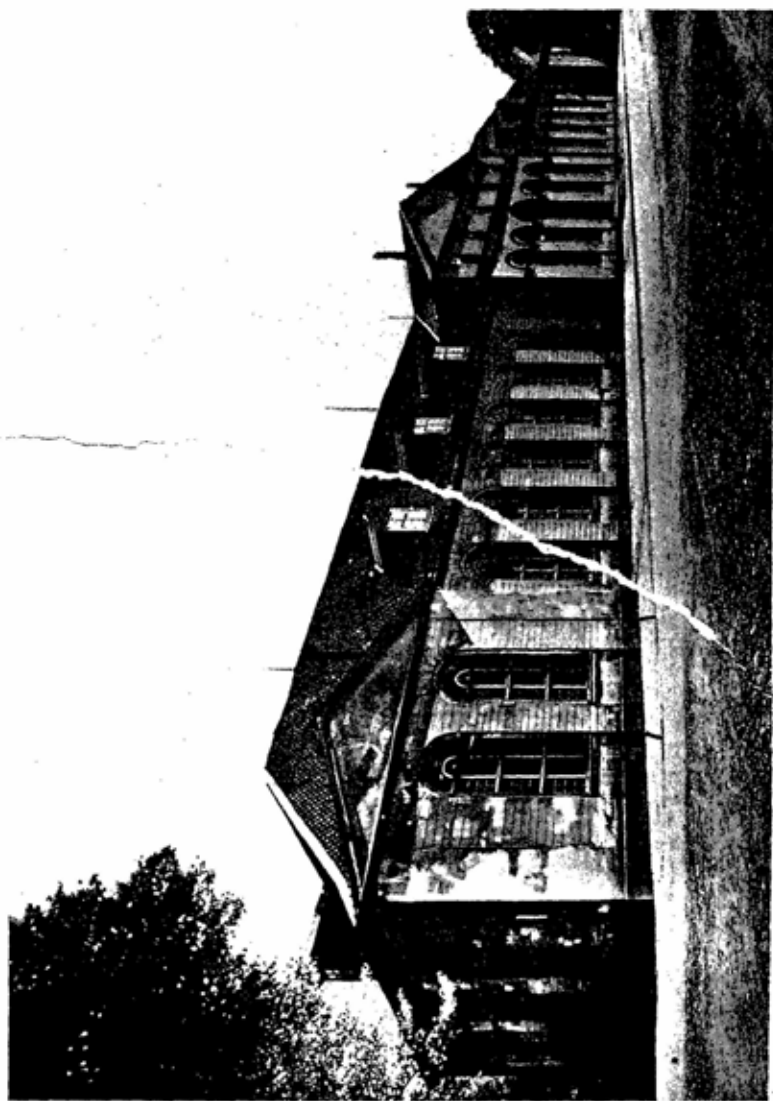
It is difficult to determine, even approximately, the time when citrus trees were first grown in Germany. The Hohenstaufen emperor Frederick II (1194-1250), who spent most of his life in his kingdom of Sicily, and to whose Court at Palermo we have had occasion to refer in a previous chapter as being more like that of an oriental sultan than of a Christian and European prince, is known to have adorned the roofs of his castle at Nuernberg with hanging gardens containing various kinds of exotic plants imported from southern Italy and the East;⁵⁸ but neither in connection with these hanging gardens nor with the park connected with the castle do citrus trees appear to be specifically mentioned. Nevertheless, it seems pretty well established that it was at Nuernberg that the first orange-trees were grown of which we possess documentary evidence; a print by the art-historian and painter Sandrart, executed towards the middle of the seventeenth century, illustrates the garden, still intact in the artist's days, which a wealthy Nuernberg merchant, Christoph Peller, had planted about a century earlier. The picture shows four rows of parterres circumscribed by stone borders; each parterre contained a different kind of plant, and each

⁵³ OV, p. 38.

⁵⁴ ML.

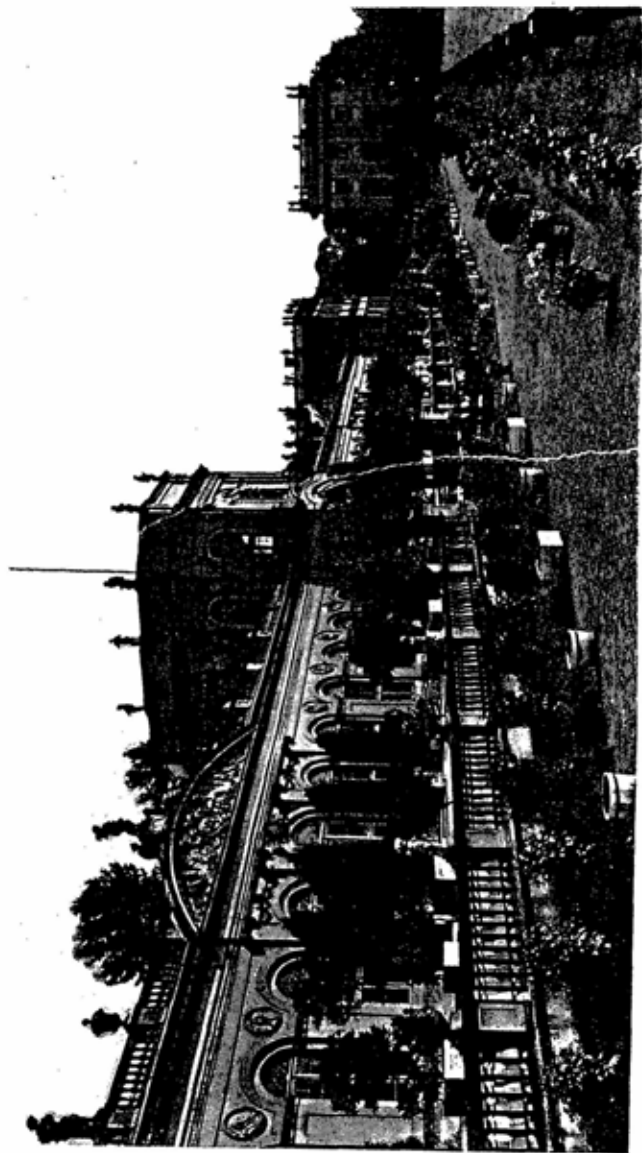
⁵⁵ BD

⁵⁶ FD, Book I, ch. 10. ⁵⁷ OU, p. 167. ⁵⁸ GU, Vol. I, p. 201.



Orange-House at the Castle of Herrenhausen, Hanover (c. A.D. 1680).

Photo : Staatliche Bildstelle, Berlin]



The Orangerieschloss (Orange-House Castle) in Cassel (Built c. 1705).
Photo : Staatliche Bildstelle, Berlin

group of three parterres was surrounded by low stone benches on which were placed decorated tubs with orange-trees and other precious exotic plants, for whose preservation during the winter there was also provided a conservatory.⁵⁹

That the art of growing delicate southern trees under shelter was known and practised in Germany at the latest during the first half of the sixteenth century, is evident from a passage in Conrad Heresbach's "Four Books of Husbandry," first published in Latin, at Cologne, in 1570, where the author states that oranges, citrons, lemons, and shaddocks were at the time "cultivated both in Germany and in France, and they are planted in vessels filled with earth, and in hot weather they are set abroad in the sun; in cold weather they are set in cellars, or in hot-houses."⁶⁰ It is furthermore known that, in 1559, Augustus, Prince Elector of Saxony, sent Joachim II of Brandenburg the model of a conservatory.⁶¹ Its exact shape and nature are not mentioned, but we may take it for granted that it was of the same type as the temporary wooden structure used to protect, in winter, the orange-trees in the gardens of the castle of Heidelberg, and which Olivier de Serres, writing during the closing years of the sixteenth century, praised as an excellent example worthy of being copied by whoever wished successfully to grow citrus trees; whilst the widely travelled German adventurer, Michael Heberer, declares that "he did not see anything the like in Italy or Egypt."⁶² How much greater would have been Olivier de Serres' admiration and praise if he had himself seen the changes which the orange-garden of Heidelberg underwent a few years later! The distance which separated the castle from the garden situated much further down the hillside had always been an obstacle to the full enjoyment, by the owners, of the citrus trees. So, when the Count Palatine Frederick V had married, in 1613, Elisabeth Stuart, a daughter of James I King of England, and had soon afterwards become the ruler of his small country on the Upper Rhine of which Heidelberg was the capital, he decided to move his orange-garden nearer up to the level of the castle itself, whilst taking advantage of the occasion

⁵⁹ GU, Vol. II, pp. 84-85.

⁶¹ GU, Vol. II, pp. 114-115.

⁶⁰ HF, pp. 166-167.

⁶² GU, Vol. II, p. 115.

in order to create for the precious trees new surroundings so beautiful as not to be surpassed, or even equalled, by any other "orangerie" in Germany. To design this new marvellous garden, Elisabeth invited to Heidelberg her erstwhile teacher, the French architect Salomon de Caus. Removing part of the hillside and filling in the valley, in less than two years he provided the castle with a terrace 280 feet long, sustained by arches the height of which reached in places up to 80 feet. Up to this lofty station they carried the orange-trees of the old garden, and—a feat which says much for the gardeners' skill—succeeded in making nearly all of them take root and prosper in the new soil; instead of the temporary wooden winter shelter, a permanent hall of masonry was built, the roof and windows of which could be removed in summer so as to let the building appear like a giant pergola.⁶³

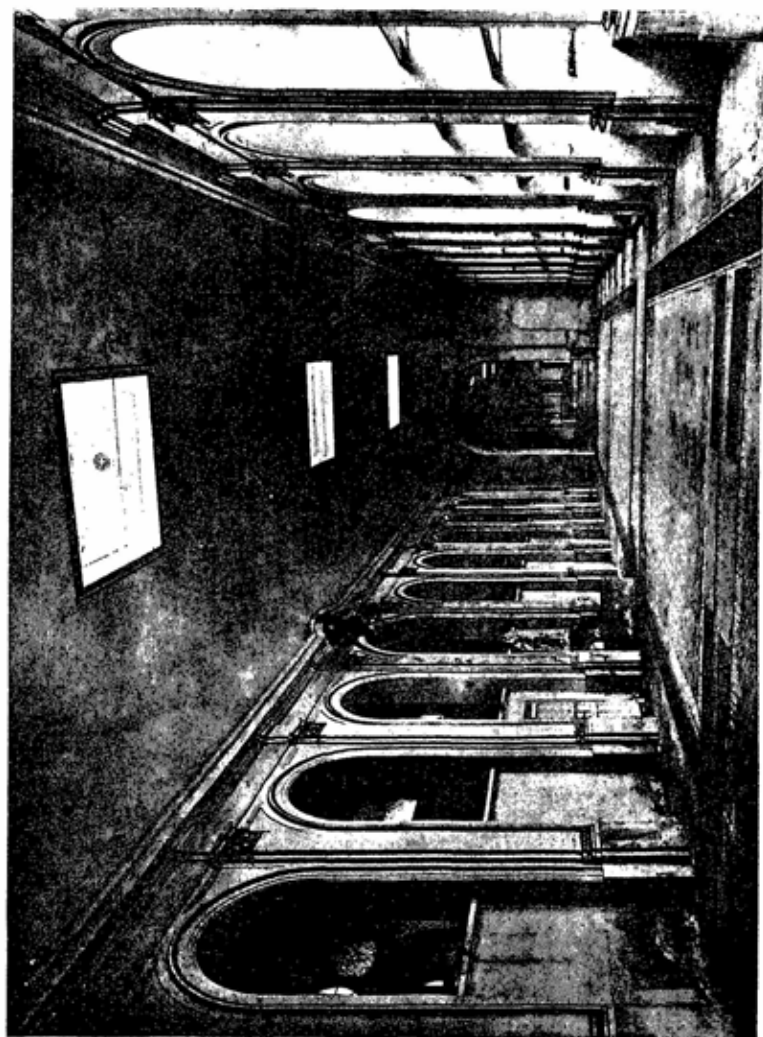
Of the existence, somewhere in Southern Germany, of another orange-garden towards the close of the sixteenth century, evidence is to be found in a stained-glass window at the Musée Cluny in Paris,⁶⁴ representing the story of Susan and the Elders. Dated A.D. 1602, it depicts the unsuspecting young woman bathing in a marble fountain whilst the two dishonest judges watch her from the depth of a grove of orange-trees heavy with ripe fruit, and apparently drawn from nature; an inscription records the name of a south-German nobleman as donor.

The second half of the seventeenth century, and the first half of the eighteenth, saw the creation in Germany of more famous palaces and gardens than any other period in the history of that country. About 1650, the then Duke of Wuerttemberg built himself, at Stuttgart, a palace in the Renaissance style, of which an "Orangerie" was the principal attraction.⁶⁵ Some thirty years later, in 1683, Henrietta of Orange, the wife of Prince John of Dessau, built a castle and *orangerie* at the village of Nischwitz, near Dessau in the Duchy of Anhalt, whereupon the prince, in her honour, elevated the village to the position of a township, changed its name to Oranienbaum (i.e. Orange-Tree), and as a symbol of this name set up a bronze orange-tree in the market square of the new city, where it can still

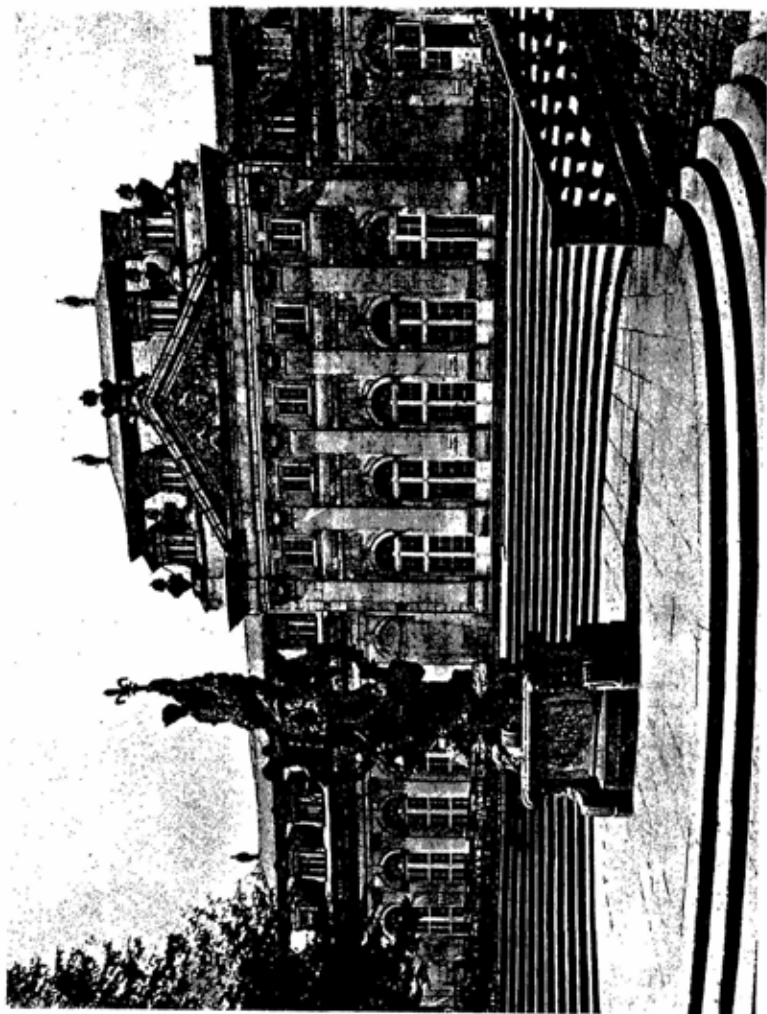
⁶³ GU, Vol. II, pp. 116 and 120.

⁶⁴ Room III, No. 2077.

⁶⁵ GU, Vol. II, p. 114.



The Orangerieschloss in Cassel (Interior).
Photo : Staatliche Bildstelle, Berlin



Orange-House of the Castle in Fulda.

(Built c. 1725.)

Photo : Staatliche Bildstelle, Berlin]

be seen standing (Plate LXXXII). Almost at the same time, the Duke of Hanover had an *orangerie* built by Le Nôtre's pupil Charbonnier at his castle of Herrenhausen (Plate LXXXIII). Frederick I, the first king of Prussia, built orange-houses at Charlottenburg, in 1696, and shortly afterwards at Oranienburg, so named after its orange-trees.⁶⁷ During the first decade of the eighteenth century, Eberhardt Ludwig IV, of Wuerttemberg, had a French garden including, of course, a big *orangerie*, installed at his castle of Ludwigsburg,⁶⁸ whilst the Landgrave Charles of Hesse built the *Orangerieschloss* (i.e. *Orangerie-Castle*) of Cassel (Plate LXXXIV and LXXXV). The year 1715 saw the completion of the "Orangerie" of Bayreuth, a palace more or less copied after Louis XIV's "Grand Trianon" at Versailles. Its most interesting feature is the so-called "Garden Room," with a fountain in its centre, the ceiling a blue sky, the walls covered with painted stucco-work imitating orange-trees with exotic birds playing amongst the golden fruit.⁶⁹ In 1725, the famous architect Max v. Weltsch built the graceful *Orangerie* of the Castle of Fulda (Plate LXXXVI).

But the most remarkable orange-conservatory ever conceived in any country was the "Zwinger" at Dresden, incidentally also the worst example of rococo art in the whole of Europe, with the sole exception, perhaps, of Spain. Already during the seventeenth century the "orangerie" had evolved from the comparatively simple type of building such as designed by Salomon de Caus for Heidelberg—and even on his plans the columns are decorated with wreaths of leaves and flowers—to more and more elaborate, ambitious, and costly structures, used not only for housing citrus trees, but also as banqueting halls or ball-rooms, particularly during the summer when the trees had been removed into the open. At a later stage the conservatory proper took the shape of two semi-circular halls, with an elaborately decorated reception room between them, an arrangement which permitted, even in winter, the holding of dinners and dances as it were in the very heart of an orange grove. The "Zwinger" may be taken as representing the most advanced

⁶⁶ GU, Vol. II, p. 207.

⁶⁸ GU, Vol. II, p. 223.

⁶⁷ GU, Vol. II, p. 270.

⁶⁹ GU, Vol. II, p. 280.

stage in this process of development of the "orangery" from a conservatory proper into a place for festive gatherings. Frederick Augustus I—August the Strong—Elector of Saxony (1694-1733) and king of Poland, having had plans prepared for a new residency that would outshine those of most other princes of his time, started by building, not the actual palace itself, but the orange-house. His wars with Charles XII of Sweden having completely exhausted his financial resources, he found it impossible to carry the work on his dream-palace beyond the stage of completing the "orangerie," which became known by the name of the square on which it stood, the Zwinger. The fact itself that it was on the orange-house rather than on other parts that work was first started, is sufficient evidence of the importance that was attached to the possession of such a building. The Zwinger is probably the biggest orange-conservatory that was ever built. It consisted in the main of two straight and two semi-circular galleries forming the four sides of a large square occupied by an open-air garden, with, on the outward side of the four corners, a banqueting hall, a theatre, a "nymphaeum" with swimming pool, and other such amenities; the size of the whole may be gauged from the fact that, when it became clear that there was no money left in the elector's coffers for the construction of the palace itself, the orange-galleries were emptied of their trees and were henceforth used for the banquets, balls, and similar functions of the Dresden court, whilst the open-air garden was set aside for the holding of festive processions, tourneys, etc.⁷⁰

The princes of the Church followed the example set by kings and dukes. Perhaps the most remarkable of all their creations in the field of garden architecture was the so-called "Favorite," of the Archbishop of Mayence, Francis Lothar, where, in contrast to what happened almost at the same moment to the Zwinger at Dresden, a building originally intended as the prelate's palatial residence was converted into a huge orange-house with banqueting halls and ball-rooms (about A.D. 1700).⁷¹ The merchant-princes of the great German trading cities, especially those whose business was largely with Italy and the East, not only emulated but sometimes set an example to their rulers in indulging

⁷⁰ GU, Vol. II, pp. 260-261.

⁷¹ GU, Vol. II, p. 230.

the costly fashion of growing citrus trees. Special mention is made, in the literature of the time, of the orange-gardens of the brothers Bose, of Leipzig, during the latter part of the seventeenth century. The better known of the two was that of the elder brother, Caspar Bose; it is said that its fame extended as far as Italy, where the Pope himself took a keen interest in its design and the details of its various parts.⁷²

The houses, palaces, castles, in the towns or in the country, endowed with "orangeries" must indeed have been very numerous in Germany; dozens of them, apart from those already mentioned, are illustrated in some of the two hundred and fifty, or so, copper prints with which the botanist Johannes C. Volckamer, of Nuernberg, adorned his great treatise on citriculture in two parts: *Nuernbergische Hesperiden* (1708) and *Neue Nuernbergische Hesperiden* (1714). Some of these orange-houses are of the collapsible type built around trees permanently rooted in the garden itself: a wooden enclosure, covered with several feet high of straw or dry grass maintained between a ceiling of wooden planks and a roof of shingles or closely-fitting boards; such houses were set up before the winter and taken to pieces again in spring, to be stored away for use in the following autumn.⁷³ But since in these "ordinary citron or orange-houses the trees do not develop in a really desirable manner, nor the fruits ever reach complete maturity" . . . the general tendency was already in Volckamer's days to discard the use of such temporary seasonal structures in favour of permanent buildings—of wood or stone, and with or without stoves for heating, according to one's means—"of which the south, east, and west sides were made of glass so as to permit the rays of the sun better to concentrate inside and thus to hasten and complete the ripening of the fruit."⁷⁴ It is from Volckamer that we get reliable information about how the gardeners and the owners of orange-houses in Germany obtained their young trees. "It is a most wonderful thing how here in Germany we have learned to grow and to produce trees which really belong to the warmest regions of Europe, in such a manner that they not only prosper but also yield fully ripe and juicy fruit, notwithstanding

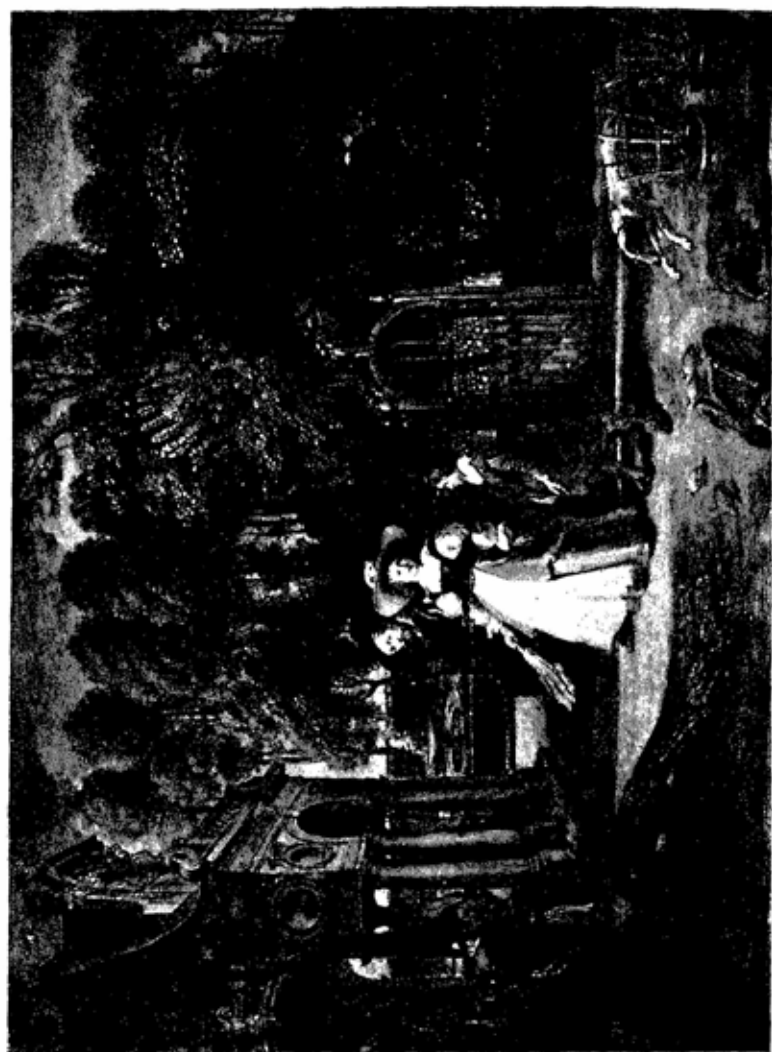
⁷² GU, Vol. II, pp. 257-258. ⁷³ BI, pp. 11-18. ⁷⁴ BJ, p. 20 ff.

the fact that [on account of the lengthy journeys] they remain for six, eight, and even more weeks out of the soil, their roots deprived of food and of moisture. . . .⁷⁶ It is common knowledge that, annually during springtime, large quantities of such young trees, of different kinds, are brought from Italy, and in particular from Genoa and Lake Garda, to many localities in Germany . . . Some people prefer the trees that come from Genoa, because as a rule these have high and straight stems, whereas those from Lake Garda are mostly low and crooked; yet, this ought not to be considered a reason for despising them, seeing that they strike roots more easily and appear to stand much better the rigours of our rough climate . . .⁷⁶ The Italians usually prepare the young trees for the journey by removing practically every bit of earth from the roots and then wrapping them in straw."⁷⁷ Previously to writing his book, Volckamer had spent several years at Rovere, a small town near Lake Garda; it is there that he acquired that thorough knowledge of citricultural technique which made it possible for him, in later years, to pride himself in having succeeded to grow successfully, in an orange-house built by himself, "many choice varieties of oranges, lemons, citrons, and limes, some of which had never before been grown in this country."⁷⁸ Amongst the many interesting observations which he records, there is one to the effect that "the citrons, lemons, and oranges that are grown in this country have either no seeds at all or only a few."⁷⁹ Now and then, the cultural methods of his time still contain, like those of the Middle Ages, many an element of superstition: "The time to transplant orange and lemon trees is usually in April and May. Many people, moreover, like to observe the moon: whether he is growing or waning, or what is his position in relation to the constellations of the sky; others attach little importance to these matters; yet, the most common practice is to transplant citrus trees whilst the moon is on the wane . . ."⁸⁰ The time of pruning the trees, in this country, is usually the end of March or the month of April, and this work ought in each case to be done during the waning moon, but never whilst the moon is in the Cancer or the Scorpion,

⁷⁶ BI, p. 5.⁷⁸ BI, p. 6.⁷⁶ BI, pp. 32-33.⁷⁹ BI, p. 40.⁷⁷ BJ, p. 35.⁸⁰ BI, p. 37.



Hubert and Jan van Eyck: The Adoration of the Lamb (c. 1430).
(Church of St. Bavon, Ghent.)



P. P. Rubens: The Painter and his Wife in their Garden in Antwerp (c. 1631).
Photo : Hanfstaengl]
(Munich, Alte Pinakothek.)

as many hold that otherwise the trees are likely to suffer from cancer or from burning; still, in this as in many other matters, necessity knows no law, wherefore one need not consider oneself too strictly bound to follow this rule."⁸¹

A very ancient superstition attributes to certain people a baneful influence on particularly delicate trees and flowers; the orange tree has often been looked upon as especially susceptible to such influences, and Volckamer shares this view, on the strength, as he claims, of actual personal experience. "It is a particularly dangerous thing for orange and citron trees to have their leaves, branches, or trunk come into contact at certain times with certain sick people, for the consequence might easily be that the whole tree will wither and die. Many will deride this as something foolish, and I myself should not have believed in it had I not actually seen it happening and had it not caused the undoing of some of my most valuable trees. Once, in winter, I noticed a woman, of my gardener's household, seated under a beautiful orange-tree in full bloom; . . . whereupon, on the very morrow, the said tree started drying up, from the top downwards, and so rapid was the progress of the disease that in the course of a few days it had infected every single branch, causing all the leaves to wilt and die."⁸²

BELGIUM AND HOLLAND.

In the Low Countries—Belgium and Holland—there appears to be no evidence to show that citrus trees were cultivated there prior to the seventeenth century. It is true that a large group of orange-trees forms a prominent feature of the landscape which serves as background to the procession of hermits and pilgrims represented in the two lower right-hand sections of Hubert and Jan van Eyck's famous polyptic "The Adoration of the Lamb," in the Church of St. Bavon at Ghent, which was painted between 1420 and 1432. A cursory glance at these orange-trees (Plate LXXXVII) might lead the onlooker to ask himself, not unnaturally, whether we have not here a valuable piece of evidence to show that citrus trees must

⁸¹ BI, p. 46.

⁸² BI, pp. 60-61.

have been grown in Flanders in the early fifteenth century ; yet, a more detailed examination of the pictures does not support such conclusions. For, the orange-trees are only one part of a rather elaborate wooded landscape which the presence of date-palms, cypresses, and "umbrella" pines stamp as quite definitely and characteristically Mediterranean. How, amongst the mists of Flanders, the van Eyck brothers, or one of them, managed to paint such a scene from memory, and with such a degree of realism, constitutes a riddle which may well remain unsolved. Maybe that Jan van Eyck—who, whilst in the service of the Duke of Burgundy, Philip the Good, travelled to Portugal in 1428 in order to paint the portrait of the Infanta Isabella whom his patron wished to marry—brought back to Ghent sketches or studies of Portuguese landscapes which he afterwards used for the composition of the piece representing the Hermits' and Pilgrims' Procession ; for let it be remembered that, Hubert having died in 1426, it was Jan who completed the picture alone. But one thing may be taken as certain, namely, that the orange-trees depicted in the "Adoration of the Lamb" were not grown in Flanders any more than were the date-palms, the cypresses, and the "umbrella pines" with which they share the honours of the background. In an introduction, entitled "An historical Essay on the State of Agriculture in Europe in the Sixteenth Century," to the 1802 reprint of Olivier de Serres' treatise, the author, one C. Grégoire, mentions the existence in Brussels of "a magnificent series of orange-trees, called the Isabels, because they date back to the time of that princess." The reference is to the arch-duchess Isabel, a daughter of Philip II of Spain, who ruled Belgium, together with her husband the cardinal-archduke Albert of Austria from 1598 to 1621, and alone, after the latter's death, till 1633. It is true that both the Botanical Garden and the royal Domain of Laeken, in Brussels, pride themselves on the possession of a few very old sour-orange trees which, in the opinion of Professor W. Robyns,⁸⁸ the learned director of the Botanical Garden, may possibly be so old ; there appear to be no definite records to prove that this is so, but in a Flemish book on citriculture, published in 1682, reference is made to a state-

⁸⁸ Opinion expressed in a letter to the author.

ment by an elderly friend of the author, who remembered having seen in Brussels, sometime about 1630, orange and lemon trees in full bearing, which were then at least thirty years old.⁸⁴ Ferrarius, in his "*Hesperides*" (1646), refers to "all kinds of citrus-trees kept by one William de Blasere, of Ghent," and adds admiringly that "also at present such trees are to be found in large numbers in Brussels and Antwerp, where, although mostly grown from seeds, they develop extremely well"; he even gives a whole-page picture to illustrate the type of tub used to grow the trees in at Ghent.⁸⁵ The fact that whole groves of orange, citron, or shaddock trees, with fruit and blossoms, figure in a number of famous tapestries which were woven in Brussels in the sixteenth century—such as "The Preaching of John the Baptist" and "The History of the Human Race" in the Cathedral of Nostra Señora del Pilar, and another "John the Baptist" in the Church La Seo, both at Zaragoza (Spain)—does not prove anything in regard to early Belgian citriculture, seeing that in most cases the designs on which the Brussels weavers worked were imported from Italy. Not so with the common occurrence, in "still lives" by Flemish painters of the seventeenth century, of freshly cut leaves, buds, or blossoms of the orange, which certainly goes to show that citrus trees must have been grown in Flanders at the time. For how could the Dutchman Jan Davidsz de Heem have painted in Antwerp (A.D. 1653) that wonderfully fresh branch of a sour orange (bigarade) tree bearing two ripe oranges and a few smaller green ones, together with flower-buds and blossoms, which occupies the left bottom corner in his canvas entitled "Fruits," now at the *Alte Pinakothek* at Munich?⁸⁶ Or Joris van Son, the flower-buds attached to the stems of oranges in his "Still Life with Fruit and Celery," dated 1660, at the Fitzwilliam Museum of Cambridge?⁸⁷ Or Alexander Coosemans of Antwerp (1627-1689), fresh orange and lemon leaves in the picture representing a "Wine Glass in a sculptured Niche surrounded by Fruit," at the Royal Museum at Copenhagen,⁸⁸ and those superbly winged, slightly wilted, leaves on the bigarade branch in the right upper corner of

⁸⁴ BG, p. 2.⁸⁵ AJ, pp. 139-143 (Book II, Chap. XVII).⁸⁶ Catalogue No. 2082.⁸⁷ No. 67.⁸⁸ No. 183.

his "Frutero" of the Prado in Madrid?⁸⁹ Or Elias van den Broeck (1650-1708)—like Jan D. de Heem a Dutchman who worked in Antwerp—the bigarade orange with winged leaves, a flower bud, and an open blossom, in his picture of a "Vase of Flowers, Orange, Bird's Nest and Insects" belonging to a private collection in London?⁹⁰

A study of the heraldic imagery of a number of Belgian families, most of whom first rose to prominence during the seventeenth century, also provides evidence of the fact that citrus trees were grown in that country at the time. Thus, the coats-of-arms of the Mouton-Duverniet, Vernéde, de la Mort de Laval, le Vassor, van Nockeren, and Vercey families contain an orange-tree, mostly set in a tub and bearing ripe fruit, in one case uprooted and thrown down (Vercey=versé). Orange branches with fruit, and in some instances with blossoms, are carried by the Everts, the Vogelsang, the Jacqueminot, the Reynvaen. The Dorange des Roches, the Gérards, the Wichers, have oranges with stems and leaves attached to them. The Citrany family carry a fruit-bearing citron-tree, the Saprveux citrons with stems and leaves. Many families have just oranges, citrons, or lemons; a curious symbol is the picture of Faith squeezing the juice out of an orange, which occurs in the coat-of-arms of the Bagolini family.⁹¹

Yet, as positive evidence of orange-trees actually growing in a Belgian garden, perhaps the most valuable document is the picture, now at the Aeltere Pinakothek in Munich,⁹² in which, in or about 1631, Peter Paul Rubens depicted himself, his beautiful second wife and favourite model Helen Fourment, and his son Nicholas, walking in the garden of his Antwerp home; four young orange-trees in earthen pots are shown in front of a low hedge, to the right of a small wooden gate leading into a tulip-garden (Plate LXXXVIII). Some fifty years later, in 1682, an Antwerp priest, Franciscus van Sterbeek, published there a useful treatise of citriculture ("Citriculture, or the Management of Exotic Trees to wit Oranges, Citrons, Lemons, Pomegranates, Laurels, and Others") in which he declares, not without some patriotic pride, that in Belgium orange and lemon-trees are being successfully

⁸⁹ No. 1462.

⁹⁰ Reproduced in QA, Pl. 14b.

⁹¹ MT, Vol. III, pp. 634-635.

⁹² Catalogue No. 313.

raised from seeds, an art in the pursuit of which "our city of Antwerp may be named amongst those that occupy the first rank."⁹³

In dealing with citriculture in Holland, the first thought to come to the reader's mind will probably be the question as to what connection there is between the orange-tree and the House of Orange. The truth is that between the name of the tree and that of the illustrious family which has for several centuries furnished Holland with rulers, there is no other connection than that which exists between any two homonyms, namely a purely accidental similarity of sound.

Close to the left bank of the river Rhône, in southern France, in the midst of meadows, orchards and mulberry plantations, lies the capital of the department of Vaucluse, one of the oldest towns of France, known already to the Romans, who called it Arausio. It formed an independent, if small, principality as early as in the days of Charlemagne, when one William, surnamed *Le Cornet*, is found mentioned as the first prince of *Aurenja*, as it was called in the Provençal tongue.⁹⁴ *Auranja*,⁹⁵ on the other hand, was the earliest name by which the people of Provence called the fruit of the orange-tree. But the Provençal language, in that age of ill-defined and constantly fluctuating orthography, was evolving rapidly towards new forms; and in the course of a few centuries both the name of the city and that of the tree became crystallized into one and the same word: *Oreng*. The famous historian of the Crusades, Jacques de Vitry (1181-1240), mentions *poma oranges*—"orange apples"—amongst the fruits of Palestine,⁹⁶ and the princes of the house of *Oreng*, or *Orenges*, or *Orrenges*, figure prominently in the writings of the fifteenth century chronicler Le Févre,⁹⁷ whilst two branches of the orange-tree with flowers and fruit, appear in the coat-of-arms carved on the tomb of Laura des Baux⁹⁸ whom some believe to have been the Laura immortalized by Petrarch; Petrarch himself—in passages which I must admit I have not been able to trace—is said

⁹³ BG, p. 2.

⁹⁵ QK, XLVII (1927), p. 423.

⁹⁷ JA, Vol. I, pp. 12 and 337; Vol. II, pp. 2 and 255.

⁹⁸ PL, p. 44.

⁹⁴ PQ, p. 22.

⁹⁶ PT, Chap. 55.

to have brought together evidence to show that the heads of his Laura's family were descended from William le Cornet, Prince of Orange,⁹⁹ and to have actually compared that illustrious family with the beautiful oranges of Murcia in Spain.¹⁰⁰ To another descendant of the Cornet, Philibert by name, who achieved fame as a soldier and a statesman in the service of Charles V, that emperor granted in 1522 considerable possessions in the Netherlands. Philibert had no children and was succeeded by his nephew René of Nassau; and when the latter also died without an heir in 1544, all his titles and possessions passed to his first cousin William, the eldest son of the titular Count of Nassau in Germany. It is this William who became famous in history as William the Silent, the founder of the Dutch Republic; and one of his descendants, William VI of Orange-Nassau, became in 1815, after the collapse of the Napoleonic regime, king of the Netherlands under the name of William I, of whom the reigning Queen Wilhelmina is a direct successor. When the title passed to the Counts of Nassau-Dillenburg in 1544, they gave the name of *Oranienstein* (=Orange Castle) to a castle which they built themselves close by the town of Diez, on an eminence above the river Lahn in the present Prussian province of Hessen-Nassau. Similarly, a castle built by one of the successors of William the Silent at Renkum in the province of Gelderland, and which is to this day used as a country-seat by the Dutch Royal family, is called *Oranje-Nassau's Oord* (Orange-Nassau's place); *Oranje-woud* (=Orange Forest) is the name of a village amidst woods and *Oranjekanaal* that of a canal, both in the province of Drenthe; whilst the five locks situated a few miles to the east of Amsterdam, at the eastern end of the great North Sea Canal which connects the North Sea with the Zuiderzee, are called the *Oranjesluizen*, or Orange Locks. It was in honour of prince Maurice of Orange-Nassau, a nephew of William the Silent, that the Dutch navigator Willem Barents gave the name of *Orange Islands* to a small island group which he discovered, opposite the North point of Novaya Zemlya, on his first expedition in search of a North-East passage to India in 1594. Dutch immigrants called *Fort Orange* the fort

⁹⁹ PL, p. 25.¹⁰⁰ HR, p. 68.

which they built in 1624 on a hill near the site of the present capital of the city of Albany, the capital of the State of New York, and it was also in honour of the Prince of Orange that the company of Germans and Swiss who settled in the State of Southern Carolina in 1735 chose for their new city the name of *Orangeburg*. The Dutch expedition, which temporarily drove the Portuguese out of the equatorial Atlantic provinces of Brazil, gave the name of *Oranjekeuap* to the cape which marks the northernmost point of the Brazilian coast-line, and at about the same time the Dutch founded the city of *Orangetown* on the island of St. Eustatius in the Dutch West Indies. The longest river of South Africa was named the *Orange River*, in honour of the Prince of Orange, by the Dutch commander of the garrison at Cape Town who led the first military expedition to its banks in 1777, and the *Orange Free State*, which lies between the Orange and Vaal rivers and is at present a province of the Union of South Africa, was originally given its name by the Boer settlers of Dutch origin who founded it as an independent republic in 1854. Even in the territory which was once German South West Africa, there is a valley with the Dutch name of *Oranje Kloof*, or Orange Gorge.

It is on no other account than the similarity of sound between the two names, that—at least since late Renaissance times if not since Petrarch—orange-trees, orange blossoms, and the orange colour have come to be regarded as symbols of the family of Orange, in particular of that branch of it whose descendants now occupy the throne of the Netherlands. In the memoirs of Marguerite de Valois (1552-1615)—daughter of Henry II and Catherine de Medici, and first wife of Henry IV—the French general Turenne is referred to as “Atlas,” like the keeper of the gate at the Garden of the Hesperides, because he helped the Prince of Orange in the latter’s struggle with Spain.¹⁰¹ Seventeenth century portraits of members of the House of Orange, at the Mauritshuis Museum of The Hague, depict the stadhouders themselves wearing orange-coloured sashes¹⁰² across their uniforms or suits of arms, and

¹⁰¹ KB, p. 192.

¹⁰² *The Stadhouders Maurice of Nassau* (Museum Catalogue No. 99) and *Frederick of Nassau* (No. 100), both painted by Michiel Jansz van Mierevelt of Delft (1567-1641).

orange-coloured crests of feathers on their helmets; ¹⁰³ a little princess has her curls interspersed with tiny bows of orange-coloured ribbon; ¹⁰⁴ whilst a Countess of Nassau (Plate LXXXIX) is represented wearing in her hair a diadem made of pearls and imitation orange-blossoms of costly enamel. ¹⁰⁵

In a delightful essay entitled "Upon the Gardens of Epicurus, or of Gardening in the Year 1685," Sir William Temple, the seventeenth century statesman, author, and lover of gardens, writes that the orange-trees which he himself has raised in his English home "are as large as any I saw when I was young in France, except those at Fontainebleau, or what I have seen since in the Low Countries, except some very old ones of the Prince of Orange's." ¹⁰⁶

Of the presence of orange-trees in Holland at least since the beginning of the seventeenth century we also find evidence—although not such abundant evidence as in the case of Belgium—in the "Still Lives" of the painters of the country, and in particular of the school of Utrecht. The fruit, in Balthasar van der Ast's canvas "Flowers, Fruit, Shells and Insects" of 1620—now at the Rijksmuseum in Amsterdam ¹⁰⁷ includes an orange that has just been cut off the tree, with stem and two leaves still attached. A bigarade (sour, or Seville) orange, with stem, winged leaves, and flower buds, all wonderfully fresh, forms part of a charming "Fruit and Flowers" with oysters and a snail (Plate XC) at the London National Gallery, ¹⁰⁸ by David de Heem (1570-1632), the father of the Antwerp painter referred to before (p. 225). A basket filled with newly picked oranges and lemons, some of them still attached to branches carrying flower-buds and open blossoms, together with grapes, apples, pears,

¹⁰³ *The Stadhouder William II* (No. 63) by Gerard van Honthorst of Utrecht (1590-1656).

¹⁰⁴ *The 11 years old Princess Mary*, daughter of Frederick Henry of Nassau (No. 64), by Honthorst.

¹⁰⁵ *Ernestine Yolande, Princess of Ligne and of the Holy Empire*, the wife of John Count of Nassau (No. 120), painted by Jan Anthonisz van Ravesteyn (1572-1657). On the occasion of the wedding, in January, 1937, of Princess Juliana of the Netherlands, the Dutch Community in Palestine sent the Princess, by a Dutch aeroplane, a present of fresh orange blossoms.

¹⁰⁶ OV, p. 38.

¹⁰⁷ Catalogue No. 387a.

¹⁰⁸ No. 2582 of the official catalogue, where it is wrongly described as "a blood orange."



Jan Anthonisz van Ravesteyn (c. 1572-1657): Portrait of Ernestine Yolande, Princess de Ligne and of the Holy Empire, Wife of John Count of Nassau-Siegen.

Photo : V. A. Bruckmann] (The Hague, Mauritshuis Royal Museum.)



David de Heem (1570-1632): Fruit and Flowers.
(National Gallery, London.)

cherries, and many kinds of vegetables and game, figures in a "Despensa" (Larder) by A. van Utrecht (1599-1652) at the Prado in Madrid.¹⁰⁹ A bigarade orange, with green leaves attached to its stem, is one of the objects depicted in "Fruit," by Abraham Hendricksz van Beyeren (c. 1620—after 1689), at the Boymans Museum in Rotterdam.¹¹⁰

The information derived from the works of the Dutch painters is found confirmed in two books on citriculture, both of them published in Amsterdam in 1676. The one, by J. Commelyn, a professor of botany at the University of Amsterdam, is, after Ferrarius' great work, entitled "The Dutch Hesperides"; the other, by one D. H. Cause, is called "The Royal Gardener." They tell us that the art of citriculture was very widely practised in Holland; it had become particularly fashionable about the year 1670, obviously under the influence of Versailles, and a surprisingly large number of people had attained to a very high degree of skill in the management of these delicate trees.¹¹¹ The beautiful illustrations of Commelyn's book, by the flower-painter Cornelis Kick, are impressive for the evidence they furnish of the large number of varieties of citrus fruits that were cultivated then all over the country; for, all these pictures, so the author assures us, with the sole exception of the China orange, of which the fruit degenerates in Holland, are drawn strictly from nature.¹¹²

The best young trees were those imported from San Remo, on the Italian Riviera, whence they were carried by land to Genoa, the port of shipment. The trees were usually lifted in December or January, the roots remaining embedded in a fair-sized ball of earth carefully wrapped in moss in order to prevent the ball falling to pieces; thus prepared, they were packed in boxes, from eight to ten trees, according to size, in each box; on board ship, care was taken to keep the boxes in a well-aired place. It is remarkable how these tender trees, closely packed and at times with no pruning whatsoever done to their heads, managed to survive the six to eight weeks' sea-voyage from Italy to the North Sea ports.¹¹³ Occasionally, they would arrive at their destination almost entirely dessicated; in such a case the gardeners, before replanting them, would

¹⁰⁹ Catalogue No. 1852.

¹¹⁰ Catalogue No. 35.

¹¹¹ AH, pp. I, II, and I.

¹¹² AH, p. II.

¹¹³ AH, p. 19.

wash the stems with a sponge or cloth dipped into milk or water sweetened with honey.¹¹⁴ But not all citrus trees grown in Holland were imported; many of them had been raised, on the spot, from seeds. These were, usually, "extracted from ripe fruits in the month of May or thereabouts, and sown, in flower-pots, under four inches of good soil, care being taken to place each seed point upwards. Some people, before sowing the seeds, allow them to macerate in tepid cow's or sheep's milk, to which they add candy-sugar if they wish to obtain specially sweet fruit."¹¹⁵ Cause, the author of "The Royal Gardener," advises his readers to water the growing trees with tepid rain-water in which a few leaves of Virginia tobacco have been left to boil, "as this refreshes the trees, and gives the fruit a more pleasant colour."¹¹⁶

OTHER COUNTRIES.

At Prague, the capital of Bohemia, the emperor Rudolph II (1552-1612)—a grandson of Charles V—who was a passionate lover of gardens, assembled, at the royal castle known as the "Hradjin," a rare collection of plants from Italy and Spain and even from distant Asiatic countries. Amongst the trees cultivated in that famous garden, Zeiller, a German traveller who passed through Prague in 1632, mentions specifically oranges, citrons, and lemons.¹¹⁷

In Sweden, the oldest "orangerie" appears to be that of the beautiful Renaissance Castle of Ulrichsdal built in 1642-44 by the notorious queen Christina, aesthete and spendthrift, whose love of luxury would have landed her country into bankruptcy had she not been forced to abdicate in time.

It was, of all places, on the icy banks of the Neva, where Peter the Great, back from his European travels, was forcibly grafting the delicate scion of French culture on the rough stock of a semi-Asiatic people, that there arose, about 1720, the first two Russian imitations of Versailles: the emperor's palace of Peterhof and, a few miles from it, that of his powerful favourite Menchikov,

¹¹⁴ DY, p. 7.

¹¹⁵ DY, p. 7.

¹¹⁶ DY, p. 8.

¹¹⁷ GU, Vol. II, pp. 94-95.

Oranienbaum, so called from the orange-trees in the conservatory attached to it.

Originally devised, as we have seen, for no other purpose than that of harbouring citrus trees, the "orangeries" of the seventeenth and eighteenth century gradually evolved into those modern all-glass conservatories and hothouses, in which human ingenuity succeeds, by forcing the pace of the seasons, to accelerate the natural course of plant-life and to trick flowers, vegetables, and trees into bearing and ripening their fruit well in advance of their natural time. At the pleasant sight of a dish of early strawberries on the breakfast-table, or of a bunch of winter violets beside the writing pad, how many of us realize that our palate and our eyes might, to this very day, have had to forego those delicate satisfactions, had it not been for the fascination exercised on northern minds by that symbol and reminiscence of a world of dark blue skies, golden sun, and spring-like winters: the orange-tree?

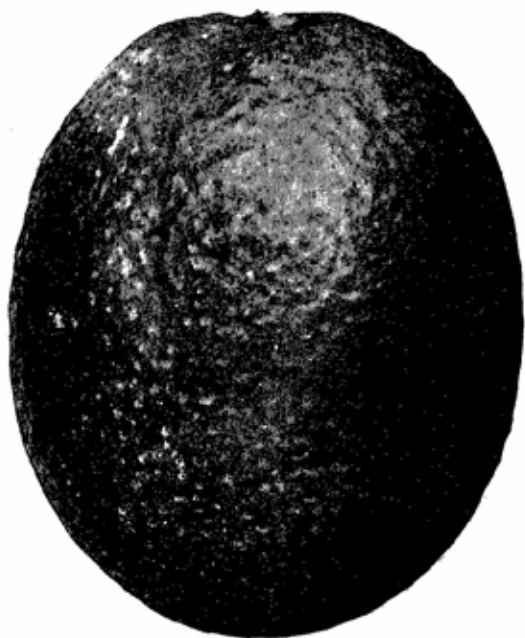
CHAPTER VIII.

THE AGE OF DISCOVERY.

THE RIDDLE OF THE SWEET ORANGE.

OF all the problems connected with the history of citriculture in Europe none has exercised more the minds of investigators, nor led to the writing of so many pages of worthless conclusions, as that of how, when, and whence the sweet orange-tree, as distinguished from orange-trees generally, first reached that continent. Basing themselves on the fact that in a number of Mediterranean and near-eastern countries sweet oranges are called "portugals" and that in current citricultural literature no mention is made of written evidence as to the existence of sweet oranges in Europe prior to the sixteenth century, some authors have maintained that no sweet oranges were indeed grown anywhere in Europe until the Portuguese brought the first trees from India or the Far East after they had discovered the direct sea-route to southern and eastern Asia around the Cape of Good Hope. Others, observing that some of the early historians of Portuguese enterprise in India speak of sweet oranges in a matter-of-fact way which seems to suggest that these fruits were not altogether unknown to them previously to Vasco da Gama's voyage of discovery of A.D. 1497, and that on the other hand the term "portugals" for sweet oranges does not appear to have been used prior to the middle of the seventeenth century,¹ conclude that the Portuguese were responsible only for the introduction into Europe of some new variety, but that sweet oranges had been cultivated on that continent before then and that their acclimatization had probably been due to the activities of the Genoese merchants of the fifteenth century, "who must have found them growing abundantly in the Levant."² In support of this latter opinion there have been brought forward, in addition to

¹ AL, p. 298, footnote.² FN, art. "Orange."



A Typical Jaffa (Shamūti) Orange.

Photo : Dr. Oppenheim, Rechoboth, Palestine]



Arab Woman with "Shamūt" (Distaff).

Photo : American Colony, Jerusalem]

good arguments such as those just mentioned, others drawn from alleged references to sweet oranges in mediaeval Latin, Arabic, or Persian documents; yet, a closer examination of the original texts reveals that with very few exceptions—such as Mas'ûdi's expression "round citron," if de Sacy's interpretation is correct (see p. 125), which is supported by at least one Arab writer, Ibn Jyâs (see p. 125)—there is hardly any justification at all for the use, by the modern translators or commentators, of the term "sweet oranges."

Thus, for instance, the evidence of that competent observer and careful recorder, Nâsir-i-Khusrau, is invoked to prove that towards the middle of the eleventh century sweet oranges were grown in Syria and Palestine. In Charles Schefer's French translation of his diary, that Persian traveller is made to say that around the city of Tripoli "there were to be seen immense plantations of sugar-cane and a large number of orange-trees with sweet and with bitter fruit, bananas, lemon-trees, and date-palms";³ and in like manner, that in Caesarea "one sees date-palms and orange-trees with sweet and with bitter fruit."⁴ I believe that Schefer's translation is correct, yet the fact is that in both cases the Persian text mentions only *nâranj waturunj* (sour oranges and *turunj*, which latter term may mean either citrons or oranges).⁵ Le Strange, in his English translation, renders *turunj* by "citron": "the whole neighbourhood of the town (of Tripoli) is occupied by fields, and gardens, and trees; the sugar-cane grows here luxuriously, as likewise orange and citron trees,"⁶ and "Caesarea is a fine city, with running waters and palm-gardens, and orange and citron-trees."⁷ As to Italy, we read in Bonavia's otherwise excellent treatise on "The Oranges and Lemons of India and Ceylon" (p. 25) that "Targioni quotes from Valeriani a statute of Fermo, of the fourteenth century, referring to citrons, sweet oranges, etc."; and a prominent modern Italian writer on citriculture reproduces, verbatim, this sentence of

³ *On voyait d'immenses plantations de cannes à sucre et une grande quantité d'orangers à fruits doux et amers, de bananiers, de citronniers et de dattiers.* (LB, p. 40).

⁴ *Qaïssarieh . . . dans laquelle on voit des dattiers et des orangers à fruits doux et amers* (LB, p. 61).

⁵ LC, pp. 17 and 26.

⁶ LB₂, p. 6.

⁷ LB₂, p. 20.

Bonavia's.⁸ The authority referred to, namely Targioni-Tozzetti, does indeed write that "in the Statute of Fermo of 1379, quoted by Valeriani . . . , there are named the sour and the sweet orange, the citron, the Adam's apple, and the lemon" ⁹ But if we look up Valeriani's own quotation of the actual Latin text of the "Statute" in question—a compilation made in 1379 of laws of different ages then in force at Fermo, a small town on the Adriatic coast of Italy—we find that mention is made there only of *mala arancia*, i.e. orange apples; it is Valeriani who, writing in 1813, adds that *mala arancia* may refer to four species or varieties, namely oranges, lemons, citrons, or limes, but that for climatic reasons he, Valeriani, thinks that in the Statute of Fermo the expression "*mala arancia*" refers to sweet oranges. ¹⁰

Yet, if the arguments used in the past to prove that the sweet orange was cultivated in the Levant and in southern Europe are found in most cases to be wrong, there is enough evidence—insufficiently made use of until now—to show that the fact in itself is correct, and that even prior to the year 1500 the sweet orange-tree was not only grown in the Far East and India, but had already been acclimatized in Western Asia and in the Mediterranean regions of Europe. True to the important rôle that country has played in the diffusion of citriculture westwards, it is Palestine that will provide us with the key to the proper understanding of the documentary evidence available.

With the possible exception of one passage in the Babylonian Talmud, where *atrunga chalita* (sweet citrons, read: "sweet citrus fruits") are recommended as an antidote against snake bites,¹¹ sweet oranges are not specifically named in any published documents referring to Palestine previously to the middle of the last century. Yet, the eighteenth-century travellers who describe the orange "forests" of Jaffa can only be referring to the old groves of sweet oranges—sour oranges are hardly grown at all in Palestine—whose creation certainly dates back at least to the eighteenth, if not to the seventeenth century. Besides, an examination of the Palestinian terminology in regard to oranges, and a study of the probable evolution of that

⁸ AB, p. 3.

⁹ OU, p. 161.

¹⁰ PF, p. 69.

¹¹ OR, Sabbath, 109b.

terminology, furnish extremely valuable suggestions. Apart from the "Valencia Late," imported from the United States of America in 1913, there are to be found in Palestine three main varieties of sweet oranges: ¹² the *shamúti* (i.e. the distaff-shaped, Plate XCI and XCII), the *baladi* (native), and the *fransawi* (French). Popular tradition as well as the opinion of experts tend to see in the *shamúti*—the big, oval, somewhat thick-skinned fruit of unequalled taste and fragrance, now known throughout the world as the "Jaffa orange" proper—a comparatively recent novelty. A local tradition believes it to have been introduced from abroad in the early eighteenth century by an Armenian monk of Jaffa who is supposed to have brought it with him on returning from a mission to the Far East.¹³ According to the late Aaron Aaronsohn, a botanist of repute and the founder and director of the first agricultural experiment station in Palestine, the *shamúti* first appeared as a sport in a Jaffa grove of *baladi* oranges sometime about the middle of the last century.¹⁴ Aaronsohn's view is shared by J. D. Oppenheim¹⁵—sometime biologist in charge of the department of plant-breeding at the Agricultural Experiment Station of the Jewish Agency in Rehoboth (Palestine)—and it finds the strongest support in the fact that, particularly in old shamuti-trees, the reversion of the fruit to the *baladi* type is a not very rare occurrence. One thing is certain, namely that the *shamúti* is the more recent one of the three principal varieties of sweet oranges cultivated in Palestine. Of the two others, that is, the *baladi* and the *fransawi*, the latter—the foreign one—must be the later introduction, seeing that the name *fransawi* (French) was obviously given to it in order to distinguish it from the *baladi*, i.e. native, variety. But this "French" orange is a fruit of very poor quality, so inferior in taste as well as in fragrance to any other variety of sweet oranges grown around the Mediterranean, that it is hardly to be supposed that anyone should have taken the trouble to propagate it in Palestine after the middle of the sixteenth century when superior varieties from Ceylon or India had already been

¹² I am not now taking into account any fruits of the mandarin (loose-skinned) type.

¹³ OY, p. 180.

¹⁴ AA, pp. IV and 8.

¹⁵ AZ, p. 519.

introduced into Portugal and from there to most Mediterranean countries; that this acclimatization, in the Levant, of a sweet orange of French origin had actually taken place not later than about the year 1500—that is, clearly before the Portuguese had had a chance to import and propagate sweet orange-trees from further Asia—seems to be evident from the fact, recorded by Ibn-Iyâs (see pp. 125 and 144), that a "French red citrus" was being grown in Egypt by the middle of the sixteenth century.

But, in addition to arguments drawn from the speech or literature of Near-Eastern nations, we have at least one direct documentary proof of the actual culture of sweet oranges in Southern France previous to A.D. 1500. Towards the end of the year 1482, the king of France, Louis XI, as famous for his bigotry and superstition as for his craftiness and statesmanship, feeling low in health and believing more in the prayers of saintly people than in the science of his physicians, sent to Italy a messenger charged with inviting or enticing to the French Court a man whose piety and charity were being at the time highly praised throughout Christendom, and whom the Catholic Church has since canonized as Saint Francis of Paula. His native townlet of Paula, in Calabria, was an important centre of citriculture,¹⁶ and the pious monk, who was a vegetarian, seems to have had a weakness for sweet oranges. For hardly had he arrived at the Court of Louis XI than we find that monarch writing, on June 29, 1483, to François de Genas, governor of the province of Languedoc (Provence), requesting the latter to send him "citrons and sweet oranges, muscatel pears and parsnips, and it is for the holy man who eats neither meat nor fish, and you will be doing me a very great pleasure."¹⁷

It is not unlikely that St. Francis of Paula had been used to eating sweet oranges already in his native country of Calabria. According to Targioni-Tozzetti—whose relia-

¹⁶ BR, p. 167b.

¹⁷ *Monsr de Genas, je vous prie de m'envoyer des citrons et des oranges douces et des poires muscadelles et des pastenargues, et c'est pour le saint homme qui ne mange ny chair, ny poisson; et vous me ferés ung fort grand plaisir. Escript à Clery, le XXIX^e juin. LOYS.*

A nostre amé et feal conseiller et general de nos finances en Languedoc François de Genas. (JR, Vol. X, pp. 124-125).

bility we have already found wanting in connection with the "Statute" of Fermo—Leandro Alberti's History of Italy (*Descr. di tutta Italia, Venice 1557, pp. 10, 18, 174, 175, 191, 201, 215*) contains references to sweet oranges grown in various places, particularly at San Remo and Rapallo in Liguria, at Sorrento, at Amalfi, in various localities of Calabria and of Puglia, etc.¹⁸ The truth is that, in all the passages indicated by Targioni-Tozzetti, Alberti refers purely and simply to *aranci* or *naranzi*, that is, just oranges, without any reference whatsoever to their being sour or sweet. On the other hand, however, the Neapolitan statesman and humanist Jovianus Pontanus, the author of the didactic poem "*De Hortis Hesperidum*" (i.e. "Of the Gardens of the Hesperides") published in 1514, whilst describing the voyage of the Portuguese discoverers to India round the Cape of Good Hope, refers to India's "shores that ever shine with the green forests of orange-trees," adding that "in India there grow oranges which are sweeter than those of Italy."¹⁹ And the celebrated traveller Ludovico de Varthema, who left Italy for Egypt and the East in A.D. 1500, writes in the Account of his Journeys, published in Rome in 1510, that at Ceylon there are to be found "sweet oranges, the best of the world,"²⁰ and that in Calicut there is to be found a kind of fruit, called *ciaquara* (the reference is to the fruit of the *Artocarpus integrifolia*) the taste of which is like that of "honey or of a sweet orange."²¹ Is it not obvious that, writing in the vernacular, that is to say not only for the scientific world of his days but also, and probably mainly, for the general public of his native country, Varthema would not have chosen the sweet orange as a term of comparison if the fruit had not been grown rather commonly in Italy at the time? And is it not just as obvious that to describe the sweet oranges of Ceylon as the best in the world implies not only that his Italian contemporaries were familiar with sweet oranges, but also that they knew that sweet oranges were likewise grown in other European countries?

With regard to Spain, although I have not been able to discover any direct references to the culture of the sweet

¹⁸ OU, p. 165.

¹⁹ BA, Book I, v. 338 ff.

²⁰ PK, Book III, Ch. ii (p. 202).

²¹ PK, p. 177.

orange-tree in that country as early as the fifteenth century, there is one testimony which, though by implication only, enables us to establish the fact beyond all doubt. It is furnished by the author of the earliest detailed description of the New World, *Gonzalo Hernandez de Oviedo y Valdez*—from A.D. 1513 to 1525 Director of the Gold and Silver Mines of Hispaniola or Española, now San Domingo, the first Spanish colony established by Christopher Columbus—who makes special mention of the sweet and of the sour orange among the trees introduced from Spain to the West Indies, where “they have multiplied to such an extent that at present there are innumerable such trees . . . in this city of San Domingo as well as in all the other parts of the island.”²² If by 1525, the year in which Oviedo left the West Indies, the trees had multiplied to the extent described by him, the introduction of the original plants must have taken place at the very beginning of the Spanish conquest of the island, that is, immediately after the year 1492. In any case this passage certainly implies that in Spain itself the culture of some variety or other of sweet orange must have been well established at the time of the discovery of the West Indies by Columbus in 1492, that is, several years earlier than Vasco da Gama’s discovery of the all-maritime route to India.

As to Portugal, no better proof is needed of the fact that sweet oranges were grown there prior to A.D. 1497, than the manner in which the various chroniclers of the first Portuguese expeditions to India speak of the sweet oranges encountered by them in the different countries through which they passed. Camões, the Homer of that new Odyssey, does not, it is true, specifically mention sweet oranges in his celebrated description of the citrus forests on one of the islands at which Vasco da Gama and his companions called on their homeward voyage:

A thousand trees are seen towards heaven rising,
 With beautiful and sweetly-scented apples:
 The orange, wearing on its lovely fruit
 The colour Daphne carried in her hair;
 Bent low, nay almost fallen to the ground,

²² LN, Book VIII, Ch. i (Vol. I, p. 288).

The citron, heavy with its yellow load ;
 And, last, the graceful lemon with its fruit
 Of pleasant smell and shaped like virgins' breasts.²³

Neither do the authors of a number of other chronicles of Portuguese expeditions to India specifically name sweet oranges ; but we shall soon see that the oranges of which they spoke were in fact sweet varieties.

The anonymous contemporary author of the "*Roteiro* or Journal of the First Voyage of Vasco da Gama" records that on April 6, 1497, shortly before the fleet reached Mombasa on the east coast of Africa, two sailing barks approached them, of which the one was laden with "fine oranges, better than those of Portugal,"²⁴ and that on the next day, as they anchored at Mombasa itself, the king of that country sent the Portuguese commander meat and "large quantities of oranges, lemons, and sugar-cane."²⁵ But Fernando Lopez Castanhedo, in his "*History of the Discovery and Conquest of India by the Portuguese*" published at Antwerp in 1554, clearly states that the two barks that met da Gama's ships near Mombasa "carried many *sweet* oranges of a much better quality than those of Portugal,"²⁶ and in the following chapter he describes the extensive orchards of the island and city of Mombasa, which contained "fruit-trees of many kinds such as pomegranates, Indian figs, sweet and sour oranges, lemons and citrons."²⁷ On the homeward voyage, da Gama's expedition stopped, on January 7, 1498, at Malindi, also on the east coast of Africa, where—says the *Roteiro*—"the captain-major sent a man on shore with . . . messengers with instructions to bring off a supply of oranges, which were much desired by our sick ; these he brought on the following day . . .";²⁸ but Castanhedo, in connection

²³ *Mil arvores estão ao céu subindo,
 Com pomos odoríferos e bellos:
 A laranjeira tem no fruto lindo
 A côr, que tinha Daphne nos cabelos:
 Encosta-se no chão, que está caíndo,
 A cidreira co'os pêsos amarelllos:
 Os formosos limões allí cheirando,
 Estão virginias têtas imitando.* (DT, IX, lvi, Author's translation).

²⁴ GF, p. 34.

²⁵ GF, p. 36.

²⁶ DX, Ch. VIII (fol. 30, r°).

²⁷ DX, Ch. IX (fol. 30, v°).

²⁸ GF, p. 89.

with this episode, informs us that this city of Malindi or Melinde is surrounded by numerous orchards which contain "every kind of vegetable and fruit, principally sweet oranges, which are very big and of excellent taste."²⁹ And in regard to Zanzibar, Castanhedo says that on that island "the forests are orange-groves, which produce very good oranges."³⁰ Gaspar Correa's *Lendas da Índia*—i.e. "Tales of India," an anthology, made around 1550, of older narratives—also have it that the king of Mombasa, in 1497, sent Vasco da Gama "a big bark laden with chickens, sheep, sugar-cane, citrons, lemons, and big sweet oranges, the best that had ever been seen . . . the men took pleasure in the present, in particular the sick (who were pleased) with the freshness of the oranges";³¹ that, when the fleet of thirteen ships which left Lisbon for India in A.D. 1500 under the leadership of Pedro Alvarez Cabral called at Malindi, they were offered "many sweet oranges";³² that Dom Francisco d'Almeida, who went out as Viceroy in A.D. 1505, was offered "sweet oranges, the best ever seen," at Bombaça³³ on the west coast of Hindustan, whilst on the Maldive Islands in A.D. 1506 he found "all the forests full of sweet orange trees."³⁴ Damião de Góis, in his celebrated chronicle of the reign of King Manuel I published in 1516, speaking of Ceylon says only that it is particularly rich in oranges;³⁵ but Duarte Barbosa, the author of "An Account of the Countries bordering on the Indian Ocean and their Inhabitants" which was completed by A.D. 1518, states that in Ceylon "the hillsides are covered with sweet and bitter oranges with three or four distinct flavours, and of some the rind is sweeter than the juice, and they are even larger than Adam's apples . . .";³⁶ and Garcia da Orta—a professor at the university of Coimbra, who went to Goa in 1534 as personal physician to the Viceroy and published there in 1562 a book of "Dialogues on the Simples and Drugs of India," probably the first European book printed in India³⁷

²⁹ DX, Ch. X (fol. 35, r°). ³⁰ DX, Ch. XXVII (fol. 79, r°).

³¹ EM, Vol. I, p. 44.

³² EM, Vol. I, p. 165.

³³ EM, Vol. I, p. 547.

³⁴ EM, Vol. I, p. 650.

³⁵ GR, Part II, p. 32 (Ch. x).

³⁶ CS, Vol. II, p. 111.

³⁷ After da Orta's death, all copies of his book that could be found were burnt by the Inquisition, who discovered that he was of the Jewish faith.

—writes that the oranges of Ceylon “are the best of the whole world in regard to sweetness and abundance of juice; one would readily give up for them all our own fruits, such as grapes and figs. It is certain that in oranges alone very good business could be done, because they are the best fruit that exists in the world.”⁸⁸ Thus, none of these early writers who mention sweet oranges in East Africa or in India expresses the least surprise at the fact that there exists such a thing as sweet varieties of oranges; most of them praise the sweet oranges of those distant countries as better in quality than those grown anywhere else in the world, and some go so far as to add that they are even better than the sweet oranges grown in Portugal. What further evidence is needed to prove that the culture of the sweet orange was already established in Portugal before the Portuguese discovered the sea route to India?

And if any doubt persists in the reader's mind as to the value of the arguments brought forward in these last few pages to prove that sweet oranges were grown in Europe before A.D. 1500, I shall only refer to Plate LIX, of the fourteenth, and Plate LX of the fifteenth century, on which the three oranges which according to an old legend the Virgin picked from a tree during her flight to Egypt (see p. 178) are clearly shown to have been of the sweet variety; besides, the ancient legend itself could never have implied that the Madonna would try to quench her baby's thirst with sour oranges!

The question might be asked: if sweet oranges were grown in southern Europe before A.D. 1500, why do all the botanical or medical writers of that age fail to mention that fruit in their books? The answer is very simple: because oranges, in those days, were used—just like citrons and lemons—as a condiment for seasoning meat or fish, and the more acid their juice the greater was their value as an article of trade. Even as late as the early eighteenth century a German botanist observed that “with the Italians the sweet oranges are not valued half as much as the sour ones, the latter being used by them in connection with every kind of roast meat, the juice being pressed over it; likewise are these same sour oranges . . . regarded by them as more palatable even than lemons.”⁸⁹ It may be that

⁸⁸ LK, p. 215.

⁸⁹ BJ, p. 169.

the very inferior fragrance and taste of the varieties of sweet oranges cultivated in Europe prior to A.D. 1500—witness the insipid “French” orange of Palestine and Egypt (see pp. 133 and 246)—were in some measure responsible for the lack of popularity of the fruit: but hardly had the public tasted the new varieties imported by the Portuguese from Asia when, particularly in central and northern Europe, the demand for sweet oranges soon came to exceed that for the sour fruit.

For, the suggestion made by Garcia da Orta to the effect that considerable profits could be made by trading in sweet oranges from Ceylon, was, it appears, shared by some of his compatriots, possibly by the Viceroy himself. Indeed, an ancient tradition relates that João de Castro (1500-1548), fourth Viceroy of India, on returning home from the East brought with him an orange-tree and planted it in the gardens of the Penha Verde, the country-house which he built himself near Cintra in the district of Lisbon, and that from this tree all other sweet orange-trees of the “Portugal” variety are descended.

Whether this be history or mere legend, the fact is that the new variety rapidly found favour with the public everywhere in Europe, and that not only in Portugal itself, but also all over the Mediterranean world, people took to growing “Portugal oranges” for commercial ends.

Damião de Goes,⁴⁰ writing about A.D. 1550, relates that in his days oranges were being exported in large quantities from Portugal to Spain. We do not know for certain whether this statement applies to sweet oranges or to sour; but that the former were obtainable at least in those parts of Spain that lay closer to the Portuguese frontier is borne out by the account, reported by a fellow-nun, of an incident in the life of Saint Theresa of Avila. Shortly before her death in hospital at Burgos, in 1582, Theresa, feeling weak and thirsty, is said to have told her attendants “that she would gladly eat some sweet oranges. The same day, a lady sent her some, and she was given a few particularly fine ones; but she hid them in her sleeve and, going downstairs in order, as she said, to see a poor sick man who was complaining badly, she distributed the oranges to the poor.”⁴¹ It is also more than probable that the “sweet

⁴⁰ According to AM, p. 30.

⁴¹ CX, pp. 368-369.

lime" (*lima dulce*) of exceptionally big size which Philip II sent from Lisbon to his daughters in Madrid, in January, 1582 (see p. 195), was in reality a sweet orange; for we have already seen that the Portuguese in India used to call this fruit *limon doce*,⁴² that is, sweet lemon.

The one thing that is certain is that the culture of the sweet orange rapidly became an important factor in the economic life of Portugal. The historian Duarte Nunez de Leão, the author of a "Description of the Kingdom of Portugal" (A.D. 1610), writes that enormous quantities of oranges, citrons, and lemons of many sorts were grown in that country in his days. "From Lisbon . . . Flemish and other merchants from northern countries carry enormous quantities of oranges and lemons to England . . . Whole shiploads are being exported from the region between the rivers Douro and Minho, where the soil is so fertile that a tree will yield as much as four cartloads of oranges." In other provinces too the precious trees are grown; in fact "the whole country is so well provided with them than in springtime no matter where a person may happen to find himself, the orange blossoms will envelop him with their scent." This time the reference is clearly to sweet oranges, for—adds the author—"as a physician says, they are able to restore fever-stricken people to health by virtue of their abundance of sour-sweet juice of unequalled taste and fragrance."⁴³ It appears that oranges were twice as cheap as lemons, since for a *real* one would buy eight or ten oranges, four to six lemons, but only one citron.⁴⁴

From Portugal the culture of the new type of sweet orange rapidly spread into other Mediterranean countries. Jean Bruyerin-Champier, physician to Francis I, wrote in 1560 that sweet oranges were found in abundance in France.⁴⁵ According to the Neapolitan agronomist Porta (1592), three kinds of oranges were grown in Italy: the sweet, the sour, and the one that is neither sweet nor sour.⁴⁶ True, neither of these two writers mentions specifically the "Portugal" orange; but the persistency with which

⁴² NE, Ch. xlii (Vol. II, p. 113 ff).

⁴³ IX, fol. 61, v^a (Chap. xxxiii).

⁴⁵ DJ, p. 636 (Book XV, Ch. xxxi).

⁴⁶ Quoted by JC, Vol. I, p. 251.

⁴⁴ BW, Vol. III, p. 480.

the term "Portugal Orange" has survived all over the Mediterranean world as the popular name for the sweet orange, may in itself be taken as proof of the early introduction of the Portuguese variety into those countries. Risso and Poiteau, writing in 1818, remarked that "the name of *pourtegalie* applied to all sorts of oranges in the region of Nice points to the fact that that country received them from Portugal."⁴⁷

Towards the middle of the last century all sweet oranges, without distinction, were still called *portogallotti* in the Piemontese provinces of Italy;⁴⁸ to this day they are called *portogalea* by the Greeks, *protokale* by the Albanians, *portoghal* by the Kurds,⁴⁹ *portucale* in Rumania, *burtugan*, *bortugan*, or *bortughal* in Egypt, in Palestine, and in the Arab countries⁵¹ as well as in Persia.⁵²

Yet, the reputation of the "Portugal" as the best variety of sweet orange in existence was not maintained for more than about a hundred years; somewhere about the middle of the seventeenth century it was superseded in the popular favour by what became known as the "China" orange.

In 1514, the Portuguese Alvarez had landed at Port Namoa, on a small island south of Canton; he was the first European to reach China by sea. Shortly afterwards Portuguese trading settlements were established on various points of the southern Chinese provinces, especially in the region of Canton, which, as has been pointed out in Chapter I, has always been an important centre of citriculture. So that there is nothing surprising in the fact that towards the end of the sixteenth century it began to be rumoured in Europe that in China there were to be found sweet oranges much superior in sweetness and fragrance even to those which the Portuguese had brought from India or Ceylon. It may be taken that the source of these rumours was to be sought not so much in the accounts of travellers—the Portuguese did their best to prevent other European nations from trading with Far Eastern countries—as in the reports of Catholic priests, and in particular of the

⁴⁷ BE, p. 10.

⁵⁰ GX, Vol. II, p. 266.

⁴⁹ GX, Vol. II, p. 265.

⁵¹ NR, p. 13.

⁵² ON, Vol. II, p. 194.

members of a number of mission stations which the Jesuits and other religious orders were establishing everywhere in the footsteps of the Portuguese discoverers.

In a report addressed to the king of Portugal and printed in Lisbon in 1569, the Dominican friar Gaspar da Cruz had already pointed out that in China "oranges are plenty and of very good quality; there are three kinds of sweet oranges that are better than all others: the ones have an extremely thin peel and their taste is almost like that of grapes; the second, have a peel that is thick and rough, and they are so sweet that they are eaten with the peel and all; the third, are of a bigger size and their peel is of medium thickness neither too thick nor too thin: these can only be eaten with sugar."⁵³

The Dutchman Jan Huyghen van Linschoten who, after having spent several years in Spain and Portugal went with the Portuguese East India fleet to Goa in 1583 and spent six years in the East, still writes of Ceylon that "as for oranges, lemons, and citrons, it has not only the best in all India, but better than any that are found either in Spain or Portugal."⁵⁴ Yet, in another place he says that in China "there are oranges that are sweeter than sugar."⁵⁵ The monk João de Lucena, the biographer of the famous Jesuit missionary St. Francis Xavier, reported in 1600 that China possesses plenty of oranges of excellent quality;⁵⁶ in 1615, the Belgian, Nicolas Trigault, also a Jesuit, who spent the last 18 years of his life (1610-1628) in China and published in 1615 the *Memoirs of his fellow-friar Matteo Ricci concerning the history of the Jesuit mission in China*, insists on the fact that in that country "the oranges and the citrons, and all other citrus fruits, are far superior, in regard to sweetness and variety, to those of other countries";⁵⁷ in another account of the activities of the Jesuits in China, written in 1640 by the Padre Alvaro Semmedo—a native of Nisa in Portugal, who had become "Procurator General of the Province of China"—and published by Manuel de Faria e Sousa in Spanish translation at Madrid in 1642, we read that "the oranges of Canton might well be queens over our own, in fact some

⁵³ GK, Chap. XII, p. biiij. ⁵⁴ JN, Vol. I, Ch. xiv (p. 79).

⁵⁵ JN, Vol. I, Ch. xxiii (p. 130). ⁵⁶ According to AM, p. 29.

⁵⁷ MW, Book I, Chap. iii (p.10). MX, p. 15.

people hold that they are not so much oranges as muscat grapes disguised,"⁵⁸ and still another Jesuit, Louis le Comte, mathematician to the king of France, Louis XIV, writes in his "New Memoirs on the present State of China," published in 1696, that in China "there are several varieties of sweet oranges; that those which are most highly prized, and which are occasionally shipped to India, are not larger than a billiard-ball, the peel being of a slightly reddish yellow, thin, smooth, and very sweet; yet to me the big ones seem so much better, especially those of Canton have a very pleasant taste."⁵⁹ Besides, there was even no need for the Portuguese to go to China in order to be able to appreciate the superior quality of her oranges; for Rumphius' *Herbal of Amboyna* (written about A.D. 1700) informs us that sweet China oranges were at the time being cultivated throughout the Malayan Archipelago, from Java, Celebes, and the Moluccas to Amboyna, and that the natives of those islands considered the tree indigenous to their country;⁶⁰ moreover, trade in sweet oranges—carefully wrapped in paper—was carried on between Chinese ports and most of the countries to the south and south-west.⁶¹ That is to say, that even before the missionaries took to writing about it, the China orange must have been well known to the Portuguese traders. So that there does not appear to be any good reason why we should not accept as correct the statement made by Duarte Ribeiro de Macedo to the effect that in 1635 "Don Francisco Mascarenhas brought with him, from Goa to Lisbon, an orange-tree that had originally come to Goa from China."⁶² It is clear that the successive importations into Portugal of new varieties of sweet oranges from India, Ceylon, and the Far East, stand in some relation with the fact, reported by Ferrarius, that sweet orange-trees had been brought from Lisbon to Rome, *ad Pios et Barberinos hortos*,⁶³ that is, to the gardens created at the Vatican by the Pii (Pius IV, 1559-1565, and Pius V, 1566-1572) and by Urban VIII (Maffeo Barberini, 1623-1644). In the earlier

⁵⁸ NT, p. 11.

⁶⁰ NE, Chap. 42 (Vol. II, p. 113 ff).

⁶¹ NE, Chap. 42 (Vol. II, p. 113 ff).

⁶² According to AM, p. 29.

⁶³ AJ, Book IV, Ch. XIII (p. 425).

⁵⁹ IZ, pp. 215-216.

case, the trees may have been descendants of the parent-tree brought home by João de Castro in 1543, in the later instance they were almost certainly derived from Don Francisco Mascarenhas' tree.

The great favour which both "Portugal" and "China" oranges had found with the public everywhere naturally led to a desire on the part of all citrus growing countries in Europe to obtain trees of those precious varieties until, in 1671, the Portuguese Government—in order to protect its orange trade which had grown into an important national asset—issued a decree prohibiting the export of any sweet orange-trees whatsoever. The measure came a century too late: "China" oranges—possibly not of such a superior variety as that which Don Francisco Mascarenhas brought home in 1635—had already become acclimatized in Spain, Italy, the South of France, and various Mediterranean islands; the official archives of the Balearic Islands, for example, show that in the course of the late sixteenth and the early seventeenth centuries Spanish governors of those islands repeatedly took home with them *terongers de la Xina*, i.e. China orange-trees.⁶⁴

EARLY CITRICULTURE IN AFRICA.

In the tropical forests of Uganda and Portuguese East Africa, M. T. Dawe—at present Director of the Department of Agriculture of the Government of Palestine—discovered some years ago, growing wild, *Balsamocitrus Dawei* and *Citropsis Daweana*; other varieties of *Citropsis* have been found by Belgian botanists in the Congo basin. Though not belonging to the genus *Citrus* itself, these African plants are however closely related to it, and some of them, such as *Citropsis latialata*, may perhaps turn out to furnish valuable stock for cultivated *Citrus*, owing to their reported complete immunity to the attacks of a particularly deadly form of root rot.

The extracts quoted in the first part of the present chapter, from contemporary accounts of the voyages of Vasco da Gama and his successors, have enabled us to establish the fact that the Portuguese discoverers of the all-sea route to India found oranges, lemons, and citrons

⁶⁴ BF, p. 15, footnote 2, and p. 16, footnote 1.

already extensively cultivated at Malindi,⁶⁵ Mombasa,⁶⁶ Pemba,⁶⁷ and Zanzibar,⁶⁸ in what is at present British East Africa. The statement, repeated by several writers, that the forests were full of citrus trees proves that the acclimatization of these trees in the countries in question must go back at least to several centuries prior to the year A.D. 1500. John Huyghen van Linschoten, apparently the first Dutchman to reach India via the all-sea route, mentions oranges, lemons, and citrons as being grown, to some extent in Mozambique,⁶⁹ and in abundance on the island of Madagascar;⁷⁰ about A.D. 1585 Sir James Lancaster, the commander of the first English expedition to India, who called at Madagascar in the year 1600, found plenty of oranges and lemons at St. Mary and in the Bay of Antongil, on the east coast of the island;⁷¹ and in 1658 the Frenchman Flacourt, the author of the first history of Madagascar, reports the presence there, of at least three varieties of oranges, and seven of citrons.⁷² If, as cannot be doubted, the terms *pamplemousse*, used by the French, and *pompelmoes*, used by the Dutch traders of the seventeenth century,⁷³ for the grapefruit, are the same as *Les Pamplemousses*, the name of a village on Mauritius⁷⁴—an island in the Indian Ocean, 550 miles East of Madagascar—then it follows that the grapefruit must have been grown there already at the time when the Dutch occupied the island, in 1598.

The early acclimatization of citrus trees along the east coast of Africa finds an obvious explanation in the presence, from very remote times, of regular commercial intercourse between that part of the Dark Continent and Arabia, Mesopotamia, Persia, India, and countries still further east. As far back as the fourth century A.D., an intensive trade in myrrh took its route from East Africa by way of the Malay Archipelago into China,⁷⁵ whilst by the ninth century the Chinese are believed to have been trading in their own vessels directly with Zanzibar.⁷⁶ The presence,

⁶⁵ DX, Ch. X. EM, Vol. I, pp. 164-165 and 238-239. CS, Vol. I, p. 23.

⁶⁶ DX, Ch. IX. GF, p. 36. EM, Vol. I, p. 44. CS, Vol. I, p. 20.

⁶⁷ CS, Vol. I, p. 27. ⁶⁸ DX, Ch. XXVII. CS, Vol. I, p. 27.

⁶⁹ JN, Vol. I, Ch. IV, p. 25. ⁷⁰ JN, Vol. I, Ch. III, p. 21.

⁷¹ IS, p. 150.

⁷² FY, Ch. XXXVI, pp. 124-125.

⁷³ KJ, p. 84.

⁷⁴ NH, pp. 1 and 14.

⁷⁵ IV, p. 480.

⁷⁶ OF, p. 25.

already referred to in a previous chapter, of large numbers of black slaves from Zanzibar on the banks of the Lower Euphrates,⁷⁷ implies of course the existence of an extensive slave trade between the East Coast of Africa and Mesopotamia. The Persian geographer al-Biruni (973-1048), who spent a number of years in India, writes of the town of Sumenat (Somnath, on the Kathiawar Peninsula, in Gujarat) as a customary port of call of the ships from Sofala (near Beira, in Portuguese East Africa) and other East African ports, *en route* for India and China; ⁷⁸ an embassy from the king of Malindi, with a gift of giraffes for the Chinese emperor, is known to have visited China in 1415.⁷⁹ Considering the comparatively short duration of the sea voyage between the southernmost ports of Hindustan and East Africa—according to Marco Polo, thanks to the strong southward currents, ships used to sail in from twenty to twenty-five days from the coast of Malabar to Madagascar⁸⁰—the conveyance of citrus fruits, or their seeds, or cuttings, or even of young trees, was a very simple affair.

How did matters stand along the west coast of Africa? Starting from the North, we find that, on the Azores Islands, which were conquered by the Portuguese in 1432, the presence of oranges amongst the fruits of the country is first mentioned, by Damião de Goes, in 1656;⁸¹ but since the passage in question occurs in what represents the earliest known description of conditions on the Azores, one cannot say with certainty that citrus trees did not already exist there previous to the Portuguese occupation, the more so since these islands were known to the Spaniards as early as A.D. 1375—they figure on a Catalan map of that year—and, much earlier still, to the Arabs, and probably even to the Carthaginians.⁸²

The earliest reference to citrus culture in the Madeira Group occurs in the writings of an Englishman, Thomas Nicols (c. 1525-1550), where mention is made of "great stores of divers sortes of fruites, as Peares, Apples, Plummes, wild Dates, Peaches of divers sortes, Mellons, Batatas, Oranges, Lemmons, Pomgranates, Citrons, Figges . . ." ⁸³ Yet the islands in question had been in

⁷⁷ HP, Vol. I, p. 306.

⁷⁸ According to MP, p. 269.

⁷⁹ IV, p. 389. ⁸⁰ MF, p. 428. ⁸¹ According to AM, p. 31.

⁸² FN, art. "Azores."

⁸³ LF, Vol. IV, p. 31.

Portuguese occupation ever since 1418, whilst Genoese travellers had probably visited them before 1339,⁸⁴ so that here again the late date on which the presence of citrus fruits is first reported does not at all prove that citriculture was not started on the Madeira Islands a long time before.

"The Canarian, or, Book of the Conquest and Conversion of the Canarians in the Year 1402, by Messire Jean de Bethencourt," a contemporary account of the first European (Spanish) occupation of the Canaries, contains no reference to citrus fruits. It is true that the book was written by two priests, whose interests were spiritual rather than economic. Some sixty years later (A.D. 1463), Luiz de Cadamosto, a Venetian sea-captain in the service of Prince Henry the Navigator, writes—in his account of his own "Journey to Guinea"—of the orange-trees of the Canaries in a manner which suggests that they were quite common plants in those islands.⁸⁵ And yet it would be wrong to conclude—as did Gallesio—that citrus fruits were not grown on the Canaries until after 1402, when they were introduced either by the Spaniards or the Portuguese;⁸⁶ for, not only were these islands known already to the Phoenicians and the Romans, not only are they known to have been visited by Arabs in the twelfth century and by the Genoese in 1270,⁸⁷ but, according to Ferrarius, an Arab writer of the fourteenth century, Bedr-ed-Din ibn Kabib al Bek—not unlikely, Bedr-ed-Din Abu-Mohammed el-Hassan Ibn-Habib, of Damascus (A.D. 1310-1377)—definitely states that on the Canaries there grows a variety of citrus whose fruit contains another, smaller fruit in itself;⁸⁸ the reference is probably to some kind of navel orange.

In connection with the Cape Verde Islands, which Cadamosta discovered in 1456, citrus-trees are believed to be first mentioned in the early years of the seventeenth century, when a monk, Balthasar Tebbes, refers to them as having been introduced by the Portuguese.⁸⁹

The Sierra Leone coast, some thousand miles or so further south, was discovered by the Portuguese Pedro de Cintra in 1462, but not until more than a century later

⁸⁴ FN, art. "Madeira Islands."

⁸⁵ AL, p. 226, footnote 1.

⁸⁶ AL, p. 226, footnote 1, and p. 343.

⁸⁷ FN, XII, 696.

⁸⁸ AJ, Book II, Ch. IV (p. 72).

⁸⁹ AM, p. 13.

do we find citrus trees specifically mentioned there. In his *Tractado dos Rios de Guiné* (Treatise of the Rivers of Guinea),⁹⁰ composed in 1594, André Alvares de Almada, a native of the Cape Verde Islands, writes that "the river Toto waters numerous orange-trees that grow along its banks . . . The rivers Tonglecu and Butibum, as well as the Alliances River have cool and fertile banks, covered with large numbers of palms and orange-trees"⁹¹ . . . Opposite Cape Ledo, which forms the point of the Sierra Leone mountain chain, there are two small well-watered islands called the Bravas, which produce oranges, citrons, lemons, sugar-cane, many bananas, and still other fruits . . . That country (i.e. Sierra Leone) is so rich in every possible produce that it lacks nothing, all kinds of victuals are to be obtained in plenty, and one finds there orange, citron, and lemon trees, as well as sugar-cane, many palms, and excellent timber for building."⁹² In 1606, another traveller, one Bartholomew André wrote, in a report on Sierra Leone addressed to the king of Portugal: "Of orange-trees I shall make no special mention, since the forests are full of them";⁹³ and a few years later, a London merchant by the name of William Finch, who visited Sierra Leone in 1607, describes there "innumerable sorts of fruits, growing wilde in their woods; whole woods of Limmon (lemon) trees, especially a little at this side the watering place near the Towne, and some few orange-trees."⁹⁴

The mouth of the River Congo was discovered by Diogo Cão, a Portuguese captain, in 1482; but the earliest reference to citrus trees in those parts appears to be in the works of Friar Balthasar Tebbes, quoted above in connection with the Cape Verde Islands, who writes that "Congo is famous on account of its many orange-trees."⁹⁵

St. Helena, discovered in 1502 by João de Nova on his voyage home from India, was found by him to be altogether uninhabited, and it is the Portuguese who are known to have imported the first live-stock, fruit-trees, and vegetables

⁹⁰ "Guinea" was the name applied to the West African coast generally, from the Gambia down to the Congo.

⁹¹ BV, p. 78.

⁹² BV, p. 79.

⁹³ Reproduced in Fernão Guerreiro's "Relações" (acc. to AM, p. 13).

⁹⁴ FX, p. 415.

⁹⁵ Acc. to AM, p. 13.

into that island.⁹⁶ In doing so, they had a very practical object in mind. The length of the sea-voyage, at that time, between Portugal—or the Cape Verde Islands—and the Mozambique coast where fresh food was obtainable, compelled the sailors to live for several months on a diet of preserved food only, in consequence of which many would die of that dreaded disease, scurvy. The colonization of St. Helena effected, from this point of view, a veritable revolution in the conditions of India travel. By providing themselves with fresh stores, and in particular with fruit and vegetables, at St. Helena, the period during which travellers had to fall back on preserved food only was considerably shortened and the danger of crews being attacked by scurvy proportionately reduced; it was above all the possibility of obtaining citrus fruits that was appreciated at St. Helena, owing to the powerful anti-scorbutic properties of all citrus juices, and in particular of that of the lemon. It is thus entirely due to Portuguese efforts that fruit-growing on the island developed at such a rate that, by 1583, Linschoten was enabled to report to his Dutch compatriots—who were preparing themselves to enter the India trade in competition with the Portuguese—that “as for fruits, as Portugal Figs, Pomegranates, Oranges, Lemons, Citrons, and the like, there are so many that grow without planting or setting, that all the valleys are full of them, which is a great pleasure to behold, for that it seems to be an earthly Paradise.”⁹⁷ Similarly, Sir James Lancaster, who called at St. Helena on his first voyage to India in April 1593, could report that he “found in this place great store of very wholesome and excellent good greene figs, oranges, and lemons very faire;”⁹⁸ and on a subsequent voyage, in addition to fresh citrus fruits, he carried with him from St. Helena a quantity of bottled lemon juice by means of which he succeeded in keeping a serious attack of scurvy under control until his arrival at Madagascar, where once more fresh fruits could be obtained. As is recounted in a printed contemporary account, half-way or so between St. Helena and the Cape, “very many of our men were fallen sicke of the Scurvey in all our ships, and unless it were in the General’s ship

⁹⁶ FN, XXIV, 8.

⁹⁷ JN, Vol. II, Ch. 94 (p. 255).

⁹⁸ IS., Vol. IV, p. 255.

only (Lancaster's), the other three were so weake of men, that they could hardly handle the sayles . . . And the reason why the General's men stood better in health than the men of other ships was this: he brought to Sea with him certaine Bottles of the Juice of Limon, which he gave to each one, as long, as it would last, three spoonfuls every morning fasting: not suffering them to eat any thing after it till noone. This Juice worketh much better, if the partie keep a short Dyet, and wholly refraine salt meate, which salt meate, and long being at the Sea is the only cause of the breeding of this Disease. By this means the Generall cured many of his men, and preserved the rest . . . In the Bay of Antongile we refreshed our men with Oranges and Limons, to cleere our'selves of this Disease . . ."⁹⁹

We are now in a position to draw a fairly reliable picture of the manner in which citrus fruits became acclimatized on the east and west coasts of Africa. In the east it was certainly the result of the activities of the Arab or Indian merchants of Mombasa, Pemba, Zanzibar, Mozambique, Sofala, and other ports on or near the mainland, or in the northern districts of Madagascar; and the immediate origin of the varieties acclimatized in these cities was either Hadhramaut, or the Persian Gulf, or—more likely—southern Hindustan. Arab and Indian sailors did not, however, venture further south than Sofala, in present-day Portuguese East Africa; for the currents which flow southward through the Mozambique Channel, and then, taking a westerly direction, sweep around the Cape of Good Hope, made the return journey northwards a dangerous enterprise. This was well known to Marco Polo, who, after remarking that ships do not sail to countries beyond Madagascar, explains that "this is the consequence of the sea running with such prodigious velocity in that direction, as to render their return impossible."¹⁰⁰

Along the west coast of Africa the Arabs have been only a factor of secondary importance in the spread of citriculture. They were undoubtedly responsible for the introduction of the first citrus-trees into the Canaries; they may have played a similar role in regard to the Madeira Islands and the Azores; but their activities in this field did

⁹⁹ IS₂, pp. 149-150.

¹⁰⁰ MF, p. 428.

certainly not extend further south than the latitude (25° N.) corresponding approximately to the southernmost limit of their Moroccan empire on the Atlantic coast. On the Cape Verde Islands, in Sierra Leone, and on the Guinea Coast generally, as well as in the region of the Congo, every probability points to the Portuguese as being responsible for the original introduction of citrus trees. In the case of St. Helena, as we have seen, there is no room left for doubt: here it is certain that citriculture was first started by the Portuguese.

But, just as the Arab and Indian populations of the East Coast did not push their settlements or trading expeditions southward beyond the Mozambique Channel, so did the Portuguese, in the west, not carry their colonizing activities further south than Benguela on the Angola coast and St. Helena in the Atlantic Ocean, both of which are situated at about the same latitude as Mozambique. Neither Bartholomew Diaz, who first discovered the Cape of Good Hope in 1488, nor Vasco da Gama, who sailed into Table Bay and out again and landed only at Mossel Bay in Natal, nor any other Portuguese after them, made any attempt to colonize the southern end of the African Continent; and so we shall not be surprised to find that citrus fruits did not become acclimatized in South Africa until about 150 years later than on St. Helena, and that, when at last they were introduced there, it was due to the activities, not of the Portuguese, but of another European nation.

In 1647, the *Harlem*, a ship belonging to the fleet of the Dutch East India Company, was wrecked in the neighbourhood of the Cape of Good Hope. Of the crew, which were fortunate enough to escape without loss of life, some were sent home to Holland on board other vessels of the fleet whilst the others remained behind to care for the cargo. They were provided with seeds, by means of which they established a vegetable garden, which thrived exceedingly well; whereupon two of the shipwrecked sailors, Leendert Janz and N. Proot, greatly impressed with the possibilities of the Cape of Good Hope from a gardening point of view, addressed to the Directors of their Company a report, urging them to establish at the Cape a garden to be used as a source of supply for their passing ships, and thus to render the Dutch fleets independent of the limited supplies of St. Helena which, besides, were not always

obtained without difficulties from the Portuguese authorities on the island. "It is beyond doubt," so write Janz and Proot in their report, dated July 26, 1649, "that all kinds of fruit trees will thrive here, as orange, lime, apple, citron, shaddock, pear, plum, cherry, gooseberry and currant, which could, whilst taking water . . . and when leaving, also be supplied with living cattle and sheep, cabbages, carrots, turnips, onion, garlic, watermelons, and pumpkins, which when ripe would keep for seven or eight months and remain good; also oranges, apples, limes and shaddocks. So that there will always be refreshments on board for the sick to their destination, which would be a great comfort to all during the voyage."¹⁰¹ In response to Janz's and Proot's suggestion, the Council of the Dutch East India Company sent out three ships, under the command of Jan van Riebeeck who, as first governor of the new Cape Colony, soon after his arrival there in April, 1652, built a fort and laid out a garden, 26 acres in extent. Early in 1654 the *Tulp* was sent to St. Helena in order to bring back various fruits, including oranges. The ship reached the Cape of Good Hope on June 11, 1654, and this date can therefore be considered the date of the first introduction of orange-trees into South Africa. Some time between June 11, 1654, and October 11, 1656, a shipment of orange-trees is known to have been received from India, but there is no record of the exact date on which they arrived.¹⁰²

EARLY CITRICULTURE IN AMERICA.

Starting with his first voyage to Cuba and Haiti or Española in 1492, Christopher Columbus, an Italian or Catalan—the riddle has not yet been solved—in the service of the Spanish monarchs Ferdinand and Isabella, discovered in rapid succession Dominica (1493), Porto Rico (1493), Montserrat (1493), Jamaica (1494), Guyana (1498), Trinidad (1498), Honduras (1502); in between, Ojeda had discovered Curaçao in 1499, whilst the mainland of Mexico, first coasted by Cordova in 1517,

¹⁰¹ "Precise of the Archives of the Cape of Good Hope," H. V. C. Liebrandt, *Letters and Documents Received, 1649-1662* Part I, p. 4 (Quoted by BB, pp. 36-37).

¹⁰² BB, p. 37.

was conquered by Cortez in 1519-1522. In one of his plays, Lope de Vega (1562-1635) represents Columbus' companions on Guanahani (Watling Island, in the Bahamas)—the first land sighted by him in America—in the act of presenting their ship's chaplain with some oranges which they had brought with them from Spain.¹⁰³

It is correct that Columbus himself was the founder of American citriculture; it appears, however, that it was not during his first, but during his second voyage, that he carried the first citrus fruits to the New World. The facts are vouched for by that very reliable witness, the famous bishop of Chiapa (Mexico) and "Apostle of the Indies," Bartolomé de Las Casas, in his *Historia de las Indias*. His father had taken part in Columbus' first voyage which resulted in the discovery of the New World; when in 1498 he again accompanied Columbus on his third voyage, young Las Casas, then 24 years old, went with him, and four years later he settled for good in the West Indies. His testimony may therefore be taken as entirely trustworthy when he writes that, on his second voyage to the West Indies in the autumn of 1493, Columbus stopped for two days at the island of Gomera, in the Canaries, where he bought a number of heifers, goats, and ewes, . . . eight sows, . . . chickens, and these became the seed whence has sprung all that there is to be found, in those parts, of the things of Castille, and so it was with the pips and seeds of oranges, lemons and citrons, melons, and every kind of vegetable."¹⁰⁴

By A.D. 1525, sour and sweet oranges, as well as lemons, citrons, and limes were already widely grown throughout the islands as well as on the continent, as is evidenced by the writings of that other competent witness, Gonzalo Hernandez de Oviedo y Valdez, who, after having served in Haiti from 1513 to 1525 as Director of the gold and silver mines of that island, published in 1535, at Seville, a bulky "General and Natural History of the Indies." In the first chapter of the eighth book, entitled "Which treats of the trees that have been introduced into this Island of Española from Europe," we read that "there have been introduced into the Island of Española orange-trees from

¹⁰³ OG, Vol. III, pp. 271-272 (*Columbus*, Act III, Scene 1).

¹⁰⁴ IU, Ch. LXXXIII, p. 3.

Spain ; and these have multiplied to such an extent that they are now to be found, innumerable, and yielding excellent fruit both sweet and sour, not only in this city of San Domingo, but also in all other parts of the island where there are Christian inhabitants, and the same is true of the other islands and of the mainland, wherever Spaniards are established. There are also many lemon, lime, and citron trees, and all of these produce large quantities of fruit of so good a quality as is not surpassed in Andalusia itself."¹⁰⁵ In the warm and damp climate of the islands, the trees multiplied so rapidly that within a few generations they formed veritable citrus forests, particularly in the sheltered valleys. Says the friar, Joseph de Acosta, in his "Natural and Moral History of the Indies," published in Seville in 1590: "Of trees (imported from Spain), those that are most widely met with are oranges, limes, citrons, and others of the same kind. In some parts they already form woods and forests of orange-trees, the which appeared to me so wonderful that on one of the islands I asked who it was that had covered the countryside with so many orange-trees ; the reply I received was that this had come about by accident through some oranges having been dropped, on the fruit decaying, their seeds had been carried along by the waters to different parts of the country where they germinated and gave rise to these thickets ; it seemed to me to be a good explanation. I say that this is (of all fruits introduced from Spain) the one that has most widely spread in the Indies, because I have not seen a single region where there were no oranges, for all over the Indies the climate is hot and damp, which is what these trees require ; they do not prosper on the mountains: I am referring to the valleys and to the coastal plains. The preserves of candied oranges which they make in the Indies are the best that I have tasted anywhere. . . ." ¹⁰⁶

The group of islands known as the Bermudas, from the name of the Spaniard Juan Bermudez who suffered shipwreck there in 1522, do not appear to have been occupied by Europeans until in 1609 two Englishmen, Sir George Somers and Sir T. Gates, having also been shipwrecked on the beach of one of the islands, established the first settle-

¹⁰⁵ LN, Book VIII, Ch. I (Vol. I, p. 288).

¹⁰⁶ BN, Book IV, Ch. 31 (p. 271).

ment; it is to Sir George Somers, or Summers, that the Bermudas owe their alternative name of Summers Islands. It is hardly to be supposed that it was the Spanish or English shipwrecked sailors who raised the first orange and lemon trees, from the seeds of fruits carried on their ill-fated ships. The credit of starting citriculture on the islands must therefore belong to the English settlers who established themselves there, first under Sir George Somers, and then under Henry Moore, who took there a group of 60 of his compatriots, in 1612, when the Bermudas had been granted to an offshoot of the Virginia Company. For within a generation of Somers' first landing, English poets were praising in their songs the beauty inherent in the citrus-trees of the islands. Thus Edmund Waller, in "The Battle of Summer Islands" (1645):

"Bermudas wall'd with rocks who does not know,
That happy Island where huge Lemmons grow,
And Orange-trees, which golden fruit doe beare?
Th' Hesperian garden boasts of none so faire."¹⁰⁷

And the Puritan poet Andrew Marvell (1621-1678)—who, as tutor to Cromwell's ward, William Dutton, was in 1653 established with his pupil at Eton in the house of John Oxenbridge, formerly a minister in the Bermudas—wrote in his well-known poem, "Bermudas":—

"Where the remote Bermudas ride
In the Ocean's bosom unespied,
From a small boat that row'd along
The listening woods received this song:
'What should we do but sing His praise . . .
He hangs in shades the orange bright
Like golden lamps in a green night' . . .
Thus sung they in the English boat
A holy and a cheerful note. . . ."¹⁰⁸

In South America, citriculture must also date from the very beginnings of European colonization. In Brazil, which was first discovered in 1499, documents dated in 1576 and 1589 show that by that time oranges were already extensively grown there; the author of a book entitled

¹⁰⁷ PU, p. 95 (Canto I, v. 5-8).

¹⁰⁸ LO, p. 393.

Noticia do Brazil (i.e., Notice on Brazil), originally published in 1589, remarks that "the older the trees grow, the better and sweeter their fruit."¹⁰⁹ It was the Portuguese, not the Spaniards, who created the first settlements in that country; and, since it has been definitely established that they introduced cattle and the sugar cane from Madeira, it may be assumed that citrus fruits as well reached Brazil via those or neighbouring islands. From Brazil, they apparently spread southward into Paraguay, part of Uruguay, and the northern Argentine, where, having multiplied to a great extent, they are now found, in certain localities, growing wild and sometimes forming veritable forests. "The lower Paraná, and the islands which form its delta, are covered with (orange) trees. They are also found more or less numerous on the islands of the Upper Paraná, on those of Uruguay, and sometimes even on the borders of those rivers. Further up those rivers, the orange becomes more frequent in the forest of Missiores, as well as those of Paraguay. On the lower islands of the Paraná and Uruguay, the fruit is sometimes bitter and sour; but further north, and especially in the province of Corrientes, in the Missiores, and in Paraguay, they are deliciously sweet and of very large size. The orange is produced perfectly from the seeds, and these being scattered everywhere by the parrots, which are exceedingly fond of the fruit, explains the fact of its general dissemination."¹¹⁰ So far in regard to the regions along the Atlantic border of South America.

In the west, facing the Pacific Ocean, Peru—the Empire of the Incas—seen by Andagoya in 1522 and conquered by Pizarro at the head of a small band of Spanish adventurers between 1526 and 1535, was first settled by Gasca in 1548-50 and placed under a Spanish viceroy in 1551; in neighbouring Chile, which Pizarro's lieutenant, Almagro, conquered in 1536, the year 1541 saw the foundation of the two great Spanish cities, Santiago and Valdivia. In these regions, it was the Spaniards, not the Portuguese, who introduced the culture of citrus trees; and they must have done so immediately on the creation of the first Spanish settlements, for by the end of the sixteenth, or the first few years of the seventeenth century, oranges, citrons, and

¹⁰⁹ AM, p. 28.¹¹⁰ AD, p. 267.

limes were abundant and cheap in both Peru and Chile, a fact which is vouched for by Garcilasso de la Vega, a "captain" or district governor in the Spanish administration in Peru, about the year 1600. Descended from the Incas, and born in Peru shortly after the Spanish occupation, his thorough knowledge of the country and its people justify the confidence with which students of history generally accept the picture which he draws of conditions in Peru previous to, and immediately after, the conquest. His book, published in Lisbon in the year 1609, contains a chapter on "the Fruits of Spain and the Sugar Cane," in which he writes that (in pre-conquest times) "there were neither figs, nor pomegranates, nor citrons, nor oranges, nor sweet or sour limes. . . . Nowadays, all these fruits are to be found in such quantities that they are considered of little value, and they are of much larger size than in Spain, a fact which compels admiration on the part of those Spaniards who have seen [them in] both countries."¹¹¹ Although Garcilasso de la Vega mentions only Peru in the title of his book, the chapter from which the foregoing quotation is taken refers to both Peru and Chile; if, about A.D. 1600, citrus fruits were already as common as that reliable witness tells us, then it is obvious that their culture must have been introduced, into the countries concerned, almost immediately after the Spanish conquest.

In regard to Florida and California—at present the two main citrus-growing regions of the Northern part of the American continent—nothing definite can be said as to how and when citriculture became first established there. Florida, discovered by the Spaniard Ponce de Leon on Palm Sunday (*Pasca Florida*), 1513, was colonized under de Soto in 1539, and, judging by what happened in Central and South America, it may be taken for granted that the culture of oranges and other citrus fruits was, also in Florida, introduced by these earliest Spanish settlers; though there do not seem to exist any written records to prove that this is so. It is, however, known that, when the first English colonists made their homes in Florida, they found both sweet and sour oranges growing wild on the shores of lakes and rivers in various parts of the country, the sour varieties being much more common.

¹¹¹ PN, Book IX, Chap. XXVIII.

Many of these sour orange groves became the foundation, in modern times, of important sweet orange plantings: in some cases, the sour orange-trees were top-worked (i.e. regrafted with sweet bud-wood) where they stood; in others, they were taken up, planted out in orchards, and there top-worked.¹¹²

In California, Europeans did not settle until much later. Lower California, discovered by Grijalva in 1534, formally annexed by Spain in 1602, was first colonized by Jesuits in 1634; in Upper California, the coast of which was first explored by Cabrillo in 1542, the first Spanish colony was founded in 1698, whilst the first, Franciscan, mission was established there in 1769. It is commonly believed that it was from these missions that the culture of citrus and other European fruits spread in course of time to the courtyards and gardens of many localities throughout California. But again, as in the case of Florida, no definite concrete evidence, as to when and in what manner these early acclimatizations were effected has so far been brought to light. This may be the reason why J. Eliot Coit attributes to the orange industry of California a much more recent origin. "Orange seeds," so he writes, "were brought into California by the Jesuit missionaries who planted the first orchard at San Gabriel Mission in 1804. The success of these trees so impressed William Wolfskill, a Kentucky trapper of German blood, that he planted the first commercial orange orchard in 1841 on the ground now occupied by the Arcade Passenger Station of the Southern Pacific Railway in the city of Los Angeles. Wolfskill was highly successful and gradually enlarged his orchard of seedling trees from two to seventy acres. It was he who, in 1877, shipped the first carload of oranges across the Rocky Mountains to eastern markets. Thomas A. Garey, of Los Angeles, established the first citrus nursery in 1865 and, by propagating trees and introducing new varieties, played a prominent part in establishing the industry. Extensive commercial development of orange-culture may be said to have begun with the completion of the Southern Pacific Railroad's connection with the East in 1876."¹¹³

Considered from the point of view of their origin, there is

¹¹² H. Harold Hume, in CP, p. 2369.

¹¹³ CP, p. 2376.

this fundamental difference between the citrus industry of the United States and that of the Mediterranean: whereas on the shores of the Mediterranean—though trees individually have, of course, died and been replaced by others—the orchards as such have generally been in existence for hundreds of years, in the United States—with the sole exception perhaps of the wild sour orange groves which have been re-budded with sweet varieties—practically all the groves are of recent origin, having been established in the course of the last sixty or seventy years, following either upon the introduction into the country of certain new and more satisfactory varieties of oranges and grapefruit of foreign origin, or upon the spontaneous appearance, in local plantations, of new strains of superior quality.

Among the many varieties of oranges to be found along the Atlantic coast-line of Brazil, the best is probably the form of navel orange known as the "Bahia" because oranges of that variety were first brought to Europe, and in particular to England, about the middle of the last century, from the town of Bahia; in its native country it is called simply *Laranja de Umbigo*, i.e. Navel Orange. There is a tradition that this Bahia Navel orange was introduced into Florida some time previous to 1835, but that the trees were killed by the frost of that year. In 1870 one William Saunders, then in charge of the plant propagation grounds of the United States Government at Washington, through the assistance of a lady missionary stationed at Bahia, had twelve trees of the Bahia Navel variety sent to Washington in tubs where they were placed in the greenhouse and used as a source of buds for the propagation of a large number of trees, which were distributed to any growers interested. Many of these trees so propagated were sent to Florida and California. Thus, early in 1873, two of them were given to a Mrs. L. C. Tibbet, of Riverside, in California, who in turn used them as a source of buds, and so raised a number of trees of this new variety; and since Mrs. Tibbett, who had apparently forgotten the name "Bahia," always answered to enquiries that her parent-trees had come from Washington, the variety became known throughout California as the "Washington Navels."¹¹⁴

¹¹⁴ AG, pp. 13-17. CP, p. 2367.

Mrs. Tibbet's two trees are still standing at Riverside, carefully protected.¹¹⁵ The same year 1870, which saw the introduction of the original "Washington Navel" trees from Brazil, witnessed also the importation into the United States of the so-called "Valencia Late" variety of oranges, the original parent trees having been brought from the Azores by S. B. Parsons, of Long Island, through Thomas Rivers, of England.¹¹⁶ In quality, this variety is much inferior to the Navel orange, but it is the only variety that remains on the tree in good condition until late autumn or early winter. The so-called Satsuma orange-tree—a variety of mandarine characterized by its exceptional hardiness to low winter temperatures and its earliness in ripening its fruit—was imported from Japan in 1876. Of lemons, the Eureka, which is the variety now almost generally grown in California, originated from a seedling grown at Los Angeles, in the orchard of one C. R. Wirkman, from a seed brought from Hamburg in 1872.¹¹⁷

An interesting question is that of the origin of the grapefruit, which in the United States is fast becoming almost as important a crop as that of oranges. Volckamer, of Nuernberg, writing in 1707, reports that in his days *pompelmoes* fruits were being imported in Amsterdam in considerable quantities, both from the East and the West Indies.¹¹⁸ Seven years later he gives a detailed description of such fruit, which he had received at Amsterdam from a friend who had himself obtained it from the island of Curaçao, a Dutch possession in the West Indies.¹¹⁹ The fruit described by Volckamer was not a grapefruit, but a shaddock, with very thick peel and hardly any pulp, as can be seen on the pictures which accompany Volckamer's text. It was obviously grown not only on Curaçao, but all over the West Indies. Hans Sloane—in later years, as Sir Hans Sloane, physician to Queen Anne, and the founder of the botanical gardens at Chelsea¹²⁰—found it cultivated at least on the islands of Jamaica and Barbados. "This tree," so he writes in his narrative of the voyage he made to the West Indies in 1687-88, "is in every thing like an Orange Tree, only larger, the Leaf has a small leaf

¹¹⁵ CP, p. 2367.¹¹⁶ CP, p. 2379.¹¹⁷ QC, p. 199.¹¹⁸ BI, p. 181.¹¹⁹ BJ, pp. 170-173.¹²⁰ He had taken his M.D. degree at the University of Orange, in Provence.

before the other larger, as has the ordinary Orange. The Fruit is round as big as a Man's Head. . . . They are planted in Jamaica and thrive extremely well . . . in Barbados their Shaddocks surpass those of Jamaica in goodness. The Seed of this was first brought to Barbados by one Captain Shaddock, Commander of an East-India ship who touch'd at that Island in his Passage to England, and left its Seed here."¹²¹ Although, as I have shown in a previous chapter, the shaddock was already cultivated by the Moors in Spain, it is not precluded that in the West Indies it was first introduced in the manner indicated by Sloane, obviously on the strength of what the people of Barbados told him. The name of Shaddock is one not uncommon in the west of Somersetshire;¹²² another native of Somersetshire, the buccaneer and hydrographer William Dampier (1652-1715)—the master of the ship from which Alexander Selkirk, the prototype of Defoe's "Robinson Crusoe," was marooned on Juan Fernandez—mentions the name of Shaddock as that of an interloper captain who traded to the Archipelago in the time of Cromwell.¹²³ Ives (1754) speaks of "*pimple-noses*, called in the West Indies Chadocks, a very fine large fruit of the citron kind, but of four or five times its size,"¹²⁴ whilst the poet James Grainger (1721-1766), in his long verse-treatise on the culture of the sugar-cane by the negroes in the West Indies, refers to "the golden Shaddock, the forbidden fruit."¹²⁵ The Chevalier de Tussac, a French botanist of the early nineteenth century, describes, in his "*Flore des Antilles*," several varieties of shaddocks "some with white pulp and very acid juice, and others whose pulp is rose-coloured and whose juice is of very pleasant taste. I have had the occasion to observe, at Jamaica, in the botanical garden of the Government, a variety of shaddock whose fruits, which are not bigger than a fair orange, are disposed in clusters (*grappes*); the English in Jamaica call this the 'forbidden fruit' or 'smaller shaddock.' Of the peels of shaddocks they make very good sweets, which are exported to Europe."¹²⁶ John Lunan, writing in 1814 of the same variety as that described by Tussac as forbidden fruit or

¹²¹ OD, Vol. I, p. 41.¹²² HM, p. 817.¹²³ HM, p. 817.¹²⁴ HM, p. 817.¹²⁵ HM, p. 817.¹²⁶ PD, Vol. III, p. 73; Plates XVII and XVIII.

smaller shaddock, says that it is "known by the name of *grapefruit*, on account of its resemblance in flavour to the grape."¹²⁷ So that, whether on account of its taste or of the fact that its fruit grows in clusters, it may be taken for practically certain that the name of "grapefruit," by which this smaller shaddock is now known throughout the world, originated during the eighteenth century in the West Indies, and so probably did the variety itself. This is also the view held by Tanaka,¹²⁸ who points out that if the grapefruit had existed in the West Indies around the year 1700, Sloane would certainly have included it in his celebrated herbarium which is still preserved at the British Museum, whereas, in fact, it is not to be found in that collection.

As to the lime, no references to the cultivation of this fruit are known to occur in the writings of the sixteenth or seventeenth centuries. Nevertheless, the acclimatization of, at least, the acid lime must go back to comparatively soon after the Spanish occupation, since otherwise it would be difficult to account for the fact that during the closing years of the seventeenth century Sloane found the tree so common in Jamaica that lime-juice had become the object of a regular export trade: "These trees are to be met with everywhere in this Island . . . The Juice is squeez'd out of the ripe Fruit in a Press that they have for that Purpose, and after standing some Time to clear itself in the Cask, is sold to be sent over into Europe."¹²⁹

Not only lime-juice, but oranges as well were shipped to Europe, from the West Indies, in the seventeenth century. This may come as a surprise to those who believe that the commercial importation, into Europe, of oranges from America started only after the invention of the steamship had greatly shortened the duration of the voyage across the Atlantic Ocean. But the fact is indisputable: Lémery, the author of a "Treatise on Foodstuffs" published in Paris in 1698, informs us that in his time oranges were being shipped to Paris "from Provence, Portugal, America, China, and several other countries."¹³⁰ The oranges from America came most probably from the West Indies. It is interesting to note that, by the Treaty of

¹²⁷ *Hortus Jamaicensis*, Vol. 2, p. 171 (acc. to AP, p. 44).

¹²⁸ BH, p. 56. ¹²⁹ OD, Vol. II, p. 182. ¹³⁰ JE, p. 51.

Rijswijk concluded a year previously, that is in 1697, Spain ceded to France the eastern part of the island of Haiti, where French settlers had gained a footing several decades before. Amongst the more curious relics of the French occupation are the family titles of two mulatto statesmen of the shortlived kingdom of Haiti which came into existence as a result of the war of independence waged by the natives against the French in the days of Napoleon Bonaparte: Prévost, Duke of Limonade, Minister of Foreign Affairs and Secretary of State to the negro King Christophe,¹⁸¹ and his friend Richard, Duke of Marmelade, a general in the Haitian army and governor of the city of Cap Henry.¹⁸² Their titles were taken from two important townships which—together with such other places as Saltrou (i.e. Dirty Hole), Grand Gosier (Big Gullet), Petit Trou (Little Hole)—evidently owed their names to the cruel jests of some French official of the old Régime.

The coloured peoples of America were possessed of a more refined taste. Like the Chinese and the Japanese, they love flowers and their scent; and so the unmatched whiteness of the orange blossom and the almost violent sweetness of its fragrance have inspired many a quaint or beautiful passage in negro folk-tales and poetry. Listen to this last stanza of a Spanish-American love-song, called "The Cabin" (*La Cabaña*):

If you come back to my cabin
Amongst the sugar-canes that weep
And sigh for love,
All the flowers will open,
And the blossoming orange trees
Will spread their scent.¹⁸³

¹⁸¹ PI, p. 130.

¹⁸² PI, p. 130.

¹⁸³ *Si vuelvas a mi cabaña*

Donde llora la caña

Con suspiros de amor,

Se abrirán todas las flores

Y darán sus olores

Los naranjos en flor. (DC.)

CHAPTER IX.

CITRUS FRUITS IN THE LIFE, LETTERS AND ART OF
NON-MEDITERRANEAN EUROPE.

FRANCE.

It is curious that in France—a country whose Mediterranean provinces have been growing citrons, and probably also oranges and lemons, at least as early as the first Crusade—the oldest records in which the use of these fruits for human consumption is specifically referred to do not date back further than to about the middle of the fourteenth century. The earliest known of such references is to “conserve (i.e. preserve) of citron,” of which, according to an entry in the Accounts of the Treasury of the Kings of France, four pounds were bought for the household of King John the Good, on Friday, 5th July, 1359. The price paid was three *sols* per pound, which—compared with seventeen deniers (one sol and five deniers) paid for one pound of loaf sugar, or thirty-four deniers (two sols and ten deniers), the price of one pound of cloves—seems a very high price indeed.¹ A quarter of a century later, in 1383, *orengat* (preserved orange peel) and *citron* are mentioned amongst a number of “candied spices” bought from one Jehan Noble, grocer, for the household of King Charles VI;² whilst that monarch’s “Master of the Garrisons of the Kitchen,” William Tirel, also called Taillevent, describes at least one manner of using these candied peels, in his recipe for a “Jacob’s Cake covered with *orengat*: good cheese in thin slices, and good cream, the yolks of eggs mixed therewith, and pieces of eel, well boiled, and lodged inside the cake before the cheese and cream are placed therein, and with plenty of sugar.”³ The *Ménagier de Paris*, a cookery-book composed in or about 1393, describes how *orengat* is made by candying the peels of oranges split into “five quarters”;⁴ it also reproduces

¹ EH, pp. 206-207.² EI, p. 230.³ OQ, p. 75.⁴ CJ, Vol. II, p. 5.

the menu of a dinner given by the Abbot of Langy to the Bishop of Paris, in which oranges—obviously of the sour variety—and powdered sugar were served with roast fish of several kinds.⁵ An entry dated in May, 1389, in the household accounts of John, Duke of Berri, refers to the sum of thirty-six *livres tournois* paid, in Paris, to one Richard de Suzay as being the balance due on an order for *pommes d'orange* (orange apples), which had no doubt been brought up the river Seine by Spanish ships.⁶ When the Duke, a few days later, left for Bourges in his Duchy of Berri, south of Orleans, it seems that he carried the precious fruit with him, for the records now mention a payment of one hundred *sols tournois* "for cartage of oranges from Paris to Bourges."⁷ It is a pity that no mention is made of the quantity of oranges for which the sum of thirty-six *livres tournois* was paid; for it might have been interesting to compare the price ruling in 1389 with that of one-half of a sol per orange, mentioned in connection with a dinner given, also in Paris, in 1412, by a Canon of the Sainte-Chapelle to the Bishop of Rieux and several other churchmen. Altogether they were twelve at table, and each of them was given an apple and half an orange; the six oranges had cost one half of a sol (that is, six deniers) each, while the apples cost only one denier a piece.⁸ The famous "Breviary of Cardinal Grimani," now at the Library of St. Mark in Venice, the work of an unknown artist of the Franco-Flemish school of miniature painters of the early fifteenth century, shows, in the picture which symbolises the month of January, the Duke of Burgundy, Philip the Good (1396-1467), at the dinner-table, in front of him a roast fowl and, as condiments, pepper and salt in beautifully chiselled gold containers and a lemon which an attendant is about to cut up; and, at a banquet which the Duke gave in Lille, on February 17th, 1453, one of the tables carried a centre piece representing the castle of Lusignan with the legendary Queen Melisinda herself, half woman and half serpent, seated on the summit of the main tower, whilst the moat around the castle was filled with orange-blossom water (*eau d'orange*) issuing from fountains in the outer walls of two small bastions.⁹ Not long after this, on December 12th,

⁵ CJ, Vol. II, p. 102.⁶ EI, p. 316.⁷ EI, p. 317.⁸ FE, p. 224.⁹ IQ, Vol. II, p. 351.

1457, a Hungarian embassy having come to Paris to ask the hand of Madeleine, the daughter of Charles VII, for their seventeen year old king Ladislas, the Comte de Foix gave them a banquet at which fried oranges (*oranges frictes*) were served together with leveret pies.¹⁰ And when, a few days later, King Charles himself gave a dinner in honour of the princess, the delicacies set before the guests included capers, cherries "with sugar," plums, and lemons (*lymons*).¹¹ In 1463, Vasco de Lucena completed, at the castle of Nieppe, a French translation of Quintus Curtius' History of Alexander the Great, and, a few years later, he presented a richly illustrated copy of his work to Charles the Bold, son and successor of Philip the Good. This precious volume, which now belongs to the collections of the Bibliothèque Nationale in Paris (French MS. 22547), has on its first page a beautifully painted miniature depicting the actual scene of the presentation of the book to the Duke, in a hall where, on an elaborately carved sideboard, silver dishes, silver bottles and jugs, and two lemons, are ostentatiously displayed.¹²

Reference has already been made (p. 238) to the citrons and sweet oranges which, in 1482, Louis XI ordered to be sent to him, from Provence, for Saint Francis of Paula, "the holy man who ate neither meat nor fish."¹³ In the account of expenses incurred in connection with the saintly man's passage through Lyons, the royal official in charge of the arrangements mentions having bought "three oranges for dinner (read, lunch) and six for supper." These were probably sour oranges, destined to season the roasts, game, and similar foods which figure amongst the very long list of dishes consumed at every meal by the holy man's retinue.¹⁴ The actual menus of these meals no doubt included such delicacies as *Perdrix á l'Orange* and *Salade de Citron* which we find described in the cookery books of the time.¹⁵ *Perdrix á l'Orange* are depicted on a painted-enamel dish by Pierre Courteys of Limoges (about A.D. 1500), now in the Galerie d'Apollon at the Louvre (Plate XCIII). The extent to which oranges had become an inseparable adjunct of roast partridges may

¹⁰ OQ, p. 99.

¹² FI, Plate XXV.

¹⁴ MY, p. 13.

¹¹ OQ, p. 100.

¹³ JR, Vol. X, pp. 124-125.

¹⁵ CJ, pp. 106-107.

be gauged from an epigram in a political pamphlet of 1594, to the effect that "a Spaniard without a Jesuit is like a partridge without an orange."¹⁶

There is, at the Cluny Museum, in Paris, a series of admirable French tapestries of the early sixteenth century, known as *Scènes de la Vie Seigneuriale*, in which the artist has depicted some of the pastimes and pleasures of the nobility on their country seats. The two panels reproduced on Plates XCIV and XCV represent a group of people surrounding a lady bathing in a marble fountain, and a nobleman and three ladies walking in a garden; in each case a servant is seen approaching them, with a bottle of wine and a citron (Plate XCIV), or a jug and a lemon (Plate XCV). Both pictures suggest that the use of the peels of citrus fruits for giving a spicy flavour to wine—a practice which Olivier de Serres described in detail in A.D. 1600¹⁷—must have been established in France at least a century before his time. But it also seems that, whilst in central and northern France citrus fruits were only used for the seasoning of meats or the flavouring of wines, in southern France they were already being eaten, like any other fruit, after meals. Says Bruyerin-Champier, physician to Francis I (about A.D. 1530): "in Provence . . . they serve, during meals, and as an exquisite dish, fresh or dried figs, grapes and raisins, and even citrons, oranges, lemons and shaddocks, which everywhere else are considered merely as seasonings."¹⁸

It is difficult to say when citrus by-products first began to be used, in France, in the preparation of perfumes and cosmetic products; yet it is certain that this happened long before the year 1500, for by the middle of the sixteenth century their manufacture was already well established. The oldest French book of instructions for the preparation of these "beauty specialities," composed in 1556 by no less an authority than the famous astrologer and alchemist Nostradamus—Michel de Nostredame, "Doctor of Physics of the Town of Salon de Craux in Provence"—contains several interesting prescriptions in which citrus fruits, or products derived from them, occupy an important place. Thus, in order "to make an ointment of sovereign smell, efficiency and excellence," the reader is advised to

¹⁶ NI, p. 255.¹⁷ NU, I 285, II 633.¹⁸ CJ, pp. 81-82.



De Courteys: The Banquet of the Gods (c. 1500).

Photo : Archives d'Art et d'Histoire] (Louvre Museum, Paris.)



Scènes de la Vie Seigneuriale
(French Tapestry, Early Sixteenth Century.)
(Musée de Cluny, Paris.)



Scènes de la Vie Seigneuriale.

(French Tapestry, Early Sixteenth Century.)

(Musée de Cluny, Paris.)

mix "four pounds of the fat of a young hog . . . , four pounds of rose water . . . , twelve apples chopped into small pieces . . . , two or three ripe quinces chopped very fine . . . , the peel of four oranges, two lemons, and half a citron . . . , crushed cloves . . . , etc." ¹⁹ Orange peel, rose-water, and *eau de naphe*—"which is made of the blossoms of orange, lemon, and citron-trees, all mixed together"—enter into the composition of "a scented water for washing the body . . . and note that this water itself is used for preparing an ointment which in three days makes a brown face turn white"; ²⁰ whilst, to make "a kind of muscat soap which whitens and softens the hands and has a sweet and pleasant smell," one is told to use "marshmallow roots . . . , starch . . . , wheaten flour, . . . , fresh pine-kernels . . . , almonds . . . , well crushed orange seeds . . . , musk . . . , oil of tartar . . . , Florentine iris." ²¹ Around 1540, Rabelais, in his fanciful description of the Manor of the Thelemites, refers to "the perfumers and hairdressers who, every morning, supply the ladies' rooms with rose-water, citrus-blossom water (*eau de naphe*), and myrtle water (*eau d'ange*);" ²² and the poet Malherbe, who lived in Provence during the last quarter of the sixteenth century, used to obtain at Hyères the oil of orange blossoms "with which the ladies rub their hair, in order to retain the powder thereon." ²³

In the sixteenth century, oranges and other citrus fruits—no doubt on account of a poetical tradition identifying them with the golden apples of Paris and of Atalanta—were considered symbols of love. Pierre de Ronsard (1524-1585), the greatest poet of the French Renaissance, referred to them in this sense in some of his most famous verses. Thus, in his "First Book of Love," he writes of oranges—"the present of Love . . . , the true sign of Love"—which he received from his beloved:—

*J'avois l'esprit tout morne et tout pesant,
Quand je receu du lieu qui me tourmente
La pomme d'or comme moy jaunissante
Du mesme mal qui nous est si plaisant.*

¹⁹ LI, pp. 36-37.

²⁰ LI, pp. 63-64.

²¹ LI, p. 75.

²² MJ, Vol. I, p. 146 (Gargantua, I, lv).

²³ Quoted by OK, p. 196.

*Les Pommes sont de l'Amour le present:
 Tu le sçais bien, ô guerriere Athalante,
 Et Cydipé qui encor se lamente
 De l'escrit d'or, qui luy fut si cuisant.*

*Les Pommes sont de l'Amour le vray signe.
 Heureux celui qui de la pomme est digne!
 Tousjours Venus a des pommes en son sein.
 Depuis Adam desireux nous en sommes:
 Tousjours la Grace en a dedans sa main:
 Et bref l'Amour n'est qu'un beau jeu de pommes.²⁴*

And similarly, in those exquisite "Sonnets for Helen," written when the poet was already an old man, the same theme recurs:—

*Cent et cent fois le jour l'Orange je rebaïse,
 Et le palle Citron qui viennent de ta main,
 Doux present amoureux, que je loge en mon sein,
 Pour leur faire sentir combien je sens de braise.*

*Oranges et citrons sont symboles d'Amour:
 Ce sont signes muets, que je puis quelque jour
 T'arrester, comme fit Hippomene Atalante . . .²⁵*

But the idea that citrus fruits were symbols of Love in no less a degree than the bow and arrows of Cupid, goes back considerably further than the time of Ronsard. Thus, at a feast given in the harbour of Marseilles, in 1524, in honour of Francis I who had just succeeded in relieving the city which had been besieged by the troops of the emperor Charles V, the *roi galant* became the target of the ladies of Marseilles who, from as far as they could reach him, threw thousands of oranges at him.²⁶ This custom of using citrus fruits as a token of Love survived in France, it seems, for several centuries; towards the close of the seventeenth century one meets it again in that passage of Perrault's *Fairy Tales* where the King's Son, having fallen in love with Cinderella, gives her a present of oranges and lemons.²⁷

The many uses to which oranges were put and the

²⁴ NA, Vol. I, p. 156.

²⁶ CJ, p. 82 (footnote).

²⁵ NA, Vol. II, p. 229.

²⁷ LX, p. 45.

importance of the trade in these fruits, in sixteenth century France, are well summed up in a passage of Olivier de Serres' already repeatedly quoted "Treatise of Agriculture": "In places where, without excessive expense, these trees successfully grow and bear fruit, they yield a profit which is admittedly very good, since nothing of what they produce is lost. For, be the fruit ripe or not, the merchants buy everything, down to the half-rotten fruit and the superfluous blossoms which have dropped to the ground. Those of the fruits that are quite ripe are dealt with in the usual manner; the very small ones which, being too numerous, have dropped to the ground, are strung up to make chains and belts; the somewhat larger ones, before they have had time to ripen, are candied wholly; fruit that is 'between good and half rotted' is finely shredded and turned into conserve (marmalade); the blossoms are made use of in the distillation of scented waters. To all this, every Frenchman will bear witness who considers the great abundance of oranges, citrons, lemons, shaddocks, which are being transported all over this realm, even as far as Paris, by big shiploads."²⁸ It appears, therefore, that even orange blossoms—which, in the eighteenth and early nineteenth century, were being shipped from Provence to the northern provinces, in barrels containing alternate layers of flowers and salt²⁹—were already an article of trade in the sixteenth century; besides, if this were not so, then there would seem to be no point in Rabelais' fanciful reference, in 1548, to a country where "the bearing sows are fed on nothing else but orange blossoms."³⁰

So far, in France, the written records do not mention any particular kind or kinds of oranges, probably because the improved varieties of sweet oranges which the Portuguese had imported from India and the Far East had not yet had time to reach Paris or the other great cities of northern France. Not so during the seventeenth century, when the public is found well acquainted with the differences in aspect, taste, and fragrance between native, "Portuguese," "China," or "Indian" oranges. We have seen, in Chapter VIII, that the first oranges introduced

²⁸ NU, Vol. II, p. 409.

²⁹ BE, p. 263.

³⁰ MJ, Vol. II, p. 46 (Pantagruel, IV, vii).

into Portugal, probably from India or Ceylon, became known as "Portuguese," and that Chinese varieties were imported at a later date. It is, therefore, only natural that "Portuguese" oranges are found mentioned, in France, earlier than "Chinese" ones. Anne-Marie-Louise d'Orléans, Duchess of Montpensier—better known as *La Grande Mademoiselle*—records in her *Memories* that, when she was still a child (about A.D. 1640) her uncle, a brother of the king, once came to visit her and brought her some Portugal oranges;³¹ Molière, in describing a comedy which was performed during a series of festivities given at Versailles by Louis XIV, in 1668, reports that on the stage there was to be seen a magnificent dish of Portugal oranges.³² On the other hand, a year earlier (1667), "China" oranges are found referred to, apparently for the first time, in Molière's comedy *L'Avare*: when Harpagon—the Miser—apologises to his mistress, who has called on him, for having no refreshments to offer her, his son replies that he has seen to that, and that he has ordered, in the name and for the account of his father, a liberal supply of "China oranges and sweet lemons."³³ Shortly afterwards, so-called "Indian" orange-trees were introduced into France. Ballon—"Director of all the King's Gardens"—wrote in 1692 that "amongst sweet oranges, those of Portugal, the Indies, and China are considered the best, but those from the Indies and China (that is, those grown on trees of the Indian and Chinese varieties) degenerate rapidly in these parts."³⁴ Similarly, and also in 1692, de la Quintinye declared that "the best of all sweet oranges are those of Portugal and those of a big, thin-skinned variety, which come from the Indies."³⁵ The reference is apparently to a variety imported from the West Indies, where the French established several settlements during the second half of the seventeenth century: The expression "the Indies" evidently points in this direction; moreover in Lémery's "Treatise of Foodstuffs," of 1698, we read that "oranges are brought to us from Provence, from Nice, from Portugal, from America, from China, and from several other countries."³⁶

³¹ Quoted by JC, Vol. I, p. 250.

³² Quoted by JC, Vol. I, p. 250.

³³ Act III, Scene xii.

³⁴ AC, p. 10.

³⁵ BC, p. 285.

³⁶ JE, p. 51.

The "sweet lemons" (*citrons doux*) mentioned by Molière were apparently not true lemons, but limes. Lémery tells us that in the seventeenth century, the ladies of the Court used to carry *citrons doux* about them, and, by biting now and then into the fruit, made sure that their lips remained red; it was by sitting down on some such limes or lemons which she was carrying in a pocket of her dress, that Louise de la Fayette, first a maid of honour of Anne of Austria and then Louis XIII's friend and confidante, became the object of a little Court scandal which seems to have been the real reason for the decision taken by her, in 1637, to retire for ever into a convent.⁸⁷ In 1770, Louis XV's great minister Choiseul was deprived of his office and ordered to retire into the country on the morrow of a *souper galant* during which his deadly enemy, the king's famous mistress Madame du Barry, always full of wit and mischief, had amused His Majesty by calling "Jump, Choiseul" to some oranges which she playfully tossed up and allowed to drop on the floor. The records do not say clearly whether the *citron*, which the students of the University of Paris were in the habit of offering to their teachers annually, early in June, was a lemon or a lime; the only details mentioned are, that after six or seven gold pieces had been pushed into the fruit, the latter was placed in a crystal cup and so offered to the teacher, and we are also told that the cup used for this special purpose was called *Landit*, after the name of the well-known holiday which used to be faithfully observed, at the time, at all French colleges.⁸⁸ This quaint custom was abolished in 1700.

One is hardly surprised to learn that, in that age of over-indulgence in every sort of pleasure and gratification, the gourmets of Paris should have become masters in the art of using citrus fruits in many different ways, some simple, others more elaborate, but all tasteful and pleasing to the palate. Witness this recipe for a lemon salad, from a French cookery book of 1652: "Take any number of lemons you like, peel them, and cut them into very thin slices, add sugar, orange and pomegranate blossoms, and arrange them [neatly on the dish]";⁸⁹ or the following

⁸⁷ IT, pp. 95-96. MM, Vol. II, p. 268.

⁸⁸ JC, Vol. I, p. 251.

⁸⁹ IW, p. 108.

prescriptions, of the year 1662, for dealing with roasted chestnuts, "You shall pour orange juice over them—this being their true sauce—and powder them with sugar; should orange juice not be available, you may use lemon juice instead, or a good sweet wine, or orange-blossom water, or rose-water";⁴⁰ or the useful hint that "to obtain a lot of juice from an orange, beat it and warm it a short while over the fire."⁴¹

It was also in the course of the seventeenth century that the use of citrus fruits for the preparation of refreshing drinks became a popular practice in France. This was probably due to the fact that, shortly after A.D. 1600, owing to the rapidly extending culture of the sugar cane in the West Indies, the price of sugar on the markets of Europe dropped to an extent which was enough to place that hitherto rather expensive commodity within the reach of the working classes in the cities. It was towards 1630 that *limonade* (lemonade) first began to be distributed in Paris; the name was due, of course, to the fact that lemon-juice was the principal ingredient entering into the composition of this drink. In keeping with the pronounced partiality of the public of those days for scents of every kind, *limonade* was usually flavoured by the addition of a few drops of rose-water or oil of ambergris. Nicolas de Bonnefon, *Valet de Chambre* of Louis XIII and the author of a delightful book on "The Pleasures of the Countryside" (1662), has a whole chapter on "Lemonades": "To prepare lemonade, take the inner parts of lemons, and remove the thick skins which separate the seeds (segments); throw them at once into clear water; add powdered sugar as much as you deem necessary, also a little crushed coriander seed and very little cinnamon enclosed in a tiny linen bag; let the whole infuse for about half a day, transferring it occasionally from one vessel into another, and squeezing the lemons by hand; then, pass the lemonade through a piece of linen, and fill it into bottles; if you like you may add musk and ambergris to give it a more pleasant taste. You may also make such lemonades from sour or other oranges in the same way as from lemons."⁴² Later on, *limonades* made of oranges became known as *orangeat*,⁴³

⁴⁰ DB, pp. 164-165.

⁴² DB, pp. 87-88.

⁴¹ DB, p. 166.

⁴³ JE, p. 52.

which probably became the origin of the English name of *orangeade*. Often a piece of candied lemon-peel was added to ordinary lemonade, in which case the drink was called *aigre-de-cèdre*. Sponsored by the medical profession, lemonade found such a ready acceptance with the public that when, in 1676, the Government decided to organize in a separate corporation those merchants who had just then set themselves up as distributors of coffee, they were also granted the exclusive right of selling lemonades. That is why the people now called in France *cafetiers* although they provide many other drinks besides coffee, were, in the seventeenth and eighteenth centuries, styled *limonadiers*, notwithstanding the fact that the Statute under which their corporation was registered entitled them to sell, in addition to "coffee in grains, in powder, and in drinks" and "all kinds of ambered and scented lemonades," also "sugar-plums, candied nuts, as well as cherries, raspberries and other fruits preserved in brandy, sherbets, *aigre-de-cèdre*, jellies, fruit and flower ices . . . , and all wines falling under the description of *vins de liqueurs*."⁴⁴ Soon, the name of *limonade* was extended to include all drinks made of scented sugar-water. La Varenne, in his "Cuisinier Français," of 1652, gives a number of recipes for their preparation: "Lemonade is prepared in different ways according to the different ingredients used. In order to make it with *jasmin*, take some two handfuls of these flowers, let them infuse for eight or ten hours in two or three pints of water; those from orange-blossoms, mace, or carnations, are made in similar manner."⁴⁵

A century or so later, namely, during the second half of the 18th century, the orange that was most highly esteemed was the one which was imported from Malta; the so-called "Indian" orange had ceased to be mentioned. "To-day," writes Le Grand d'Aussy in his *History of the Private Life of the French*, "we place the orange of Malta in the first rank, and that of Portugal in the second."⁴⁶ In a letter written from Paris on August 23, 1775, Horace Walpole—describing the *bal paré* given on that day in honour of the marriage of a princess of the royal house

⁴⁴ JC, Vol. III, p. 106.

⁴⁵ IW, p. 358.

⁴⁶ JC, Vol. I, p. 250.

—related that “in the intervals of dancing, baskets of peaches, China oranges (a little out of season), biscuits, ices, and wine and water, were presented to the royal family and dancers”;⁴⁷ the “China oranges” referred to as being a little out of season were probably grown on China-orange trees in the King’s conservatories, and therefore constituted a rarity for most of the guests. A few years later, at a similar entertainment given by the Court at the Hôtel de Ville of Paris in honour of the birth of the Dauphin, “the buffets were furnished with almond biscuits, cakes, sweetmeats, candied fruits, oranges, ices, sweet barley-water, lemonade, tea and wine...”⁴⁸ At the château of Trianon, which Louis XV built for Madame du Barry, orange and lemon branches, with fruit and blossoms, form one of the main motifs in the wall-decorations of the dining room.⁴⁹

During the latter half of the 18th century, the scents most in vogue amongst the wealthier classes, in France, were those made of the essential oils extracted from the peel of citrus fruits. “Lemon perfume excels over all others; in spite of the reputation which ambergris has gained, lemon has prevailed, and has now taken its place... The most fashionable essences at present are those of lemon peel; it is true that their perfume is delightful,” writes, about 1770, the author of a “Treaty on Distillation” which went into several editions,⁵⁰ and which contains detailed instructions for the manufacture, on a commercial scale, of a large number of perfumes, sweets, and drinks, based on the utilization of the peels, the blossoms, and the leaves of various kinds of citrus. Under the circumstances, it is no wonder that the import trade in citrus fruits grew rapidly in volume. The author whom we have just quoted devotes several pages to the description of the importance of the trade in lemons and of the manner in which it was carried on.⁵¹ Next to lemons, it was the sour orange that supplied the principal raw material for the manufacture of citrus by-products. Sour oranges came mostly from the French and Italian Riviéras, wrapped in paper and packed in barrels and

⁴⁷ PV, p. 239.⁴⁸ LH, p. 118.⁴⁹ LH, p. 243.⁵⁰ EU, pp. 181 and 185.⁵¹ EU, pp. 192-193 and 207.

boxes, of which whole shiploads were, each year, dispatched from the port of Nice, where this trade was mainly concentrated.⁵² Hardly less important than that in oranges, was the trade in orange blossoms, and this as well had its principal seat in Provence, whence thousands of barrels, filled with alternate layers of blossoms and salt, were sent northwards annually, in spring,⁵³ as raw material for the manufacture of medicines, liquors, ointments, powders, oils, extracts, cakes, sweetmeats, and many other articles useful to health or pleasant to the taste.

The blossoms did not, of course, arrive at their destination in a fresh enough condition to allow them to be made into the small bouquets of orange blossoms which the brides of France wore on their wedding day until human ingenuity and an enormously increased population led to the wholesale manufacture of machine-made substitutes. When and where this graceful custom first came into existence, no one, it seems, has ever been able to say. That it is of comparatively recent origin may be taken for granted, for no traces of it are to be found in any written documents prior to the beginning of the nineteenth century. It may possibly go back to the lavish use of orange blossoms at the wedding of Mademoiselle de Louvois, in 1679, when, in the words of Madame de Sévigné, "the place was full of flowering orange trees, and of blossoms in boxes."⁵⁴ One is tempted to assume that in their desire to imitate the example set by Louvois—and in France the common people have always liked to copy the customs and manners of the Aristocracy—people less wealthy than Louis XIV's millionaire minister had to be satisfied with a few orange blossoms pinned to the bride's dress or to her veil. Such at least was the form in which the custom appears firmly established in France around 1830, when orange blossoms were already worn on their wedding day not only by the daughters of the rich but even by that romantic precursor of the Paris *midinette* of to-day, whom Musset, in a delightful poem, has immortalized under the name of Mimi Pinson:—

⁵² BE, p. 273.⁵³ BE, p. 273.⁵⁴ NX, Vol. III, p. 334.

*D'un gros bouquet de fleurs d'orange
 Si l'amour veut la couronner,
 Elle a quelque chose en échange,
 Landerivette !
 A lui donner.*

GERMANY.

Though, owing to the close political relations between Germany and Italy in the thirteenth and fourteenth centuries, many Germans must have become familiar with the use of citrus fruits both for the table and for medicinal purposes, and though it is certain that, at quite an early date, Jewish merchants were engaged in the importation, from southern Europe, of citrons for the ritual requirements of the many Jewish communities settled in Germany, yet it is not until we reach the fifteenth century that written evidence is found of the use of citrus fruits in that country. The very earliest of these references, however, curiously enough, show that these fruits already played a part in popular sport. In almost every German town there used to take place, at least once every year, a great archery-festival (*Schuetzenfest*); at Breslau, where, in the fifteenth century, these festivals were known as *Pomeranzenschiessen* (orange-shooting), it was the custom to present the most successful competitor with a pewter plate containing a large orange (*Pomeranze*) and a beaker of wine surrounded by a wreath of roses, whilst he who obtained the lowest number of points had to be satisfied with a piece of white cheese surrounded by a wreath of nettles, on a wooden dish.⁵⁵ The name of *Pomeranze*, for the orange, is but a German adaptation of the mediaeval Latin expression *pomarancia*, itself composed of the two Italian words *pomo* (apple) and *arancia* (orange).

In 1474, the Countess Mathilda of Wuertemberg, who was taking the baths at Liebenzell, received a letter, still extant, from a Dr. Heinrich Steinböwel, in which the writer, in order to "recommend himself to her kind attention," informs her that he is sending her a present of 24 oranges and a few lemons.⁵⁶

⁵⁵ GP, p. 273.⁵⁶ GP, pp. 257-258.

The two instances just quoted obviously point to oranges still being rare fruits in Germany towards the end of the fifteenth century. A portrait of Maximilian of Austria as a child, painted by Seisenegger in 1530, shows the young prince holding a bejewelled dagger in one hand and a sweet orange in the other,⁵⁷ a detail which might tempt us to conclude that during the first half of the sixteenth century this fruit was still very rare, in Germany, and correspondingly expensive. Yet it does not seem that this was the case for oranges in general, since there is written evidence to show that at the time in question, or very shortly afterwards, the practice of throwing oranges—no doubt of the sour varieties, which were more common—as tokens of love, had already become established amongst the younger generation to such an extent that the moralists of the day felt compelled to raise their voice against what they considered an immoral game. Writing in 1554, Johannes Matthesius, a propagandist of the Reformation, castigates in the following terms the "modern German girl" of his time: "A damsel who must needs drive about for pleasure, and have her own pocket-money; who writes love-letters, does not shrink from throwing oranges down from her balcony, or from spending half her nights standing by her window";⁵⁸ evidently, it cannot have been very difficult to obtain oranges in the markets of the principal German towns. Similarly, if a popular German proverb of the time of the Thirty Years' War says that "Lemons do not go without sugar,"⁵⁹ the lemon, and the manner of using that fruit, must have been commonly known to the people in the early years of the seventeenth century.

These conclusions find additional support in the ample evidence that is available of the existence of an active import trade in citrus fruit in seventeenth century Germany. It has been pointed out before that all over Europe the earliest traders in citrus fruit were the Jewish merchants engaged in supplying their co-religionists with citrons for the ritual of the Feast of Tabernacles. Reference has been made (p. 171) to the passports issued, in 1389, by the

⁵⁷ Royal Museum, The Hague, Catalogue No. 271.

⁵⁸ Quoted by PW, article "Pomeranze," 7.

⁵⁹ JD, 28, 29 (Quoted by PW, article "Citrone," 5).

Archduke Albrecht III of Austria to three Jewish merchants who wished to travel to Italy for the purpose of buying such citrons. There can be no doubt that even at this early period, German Jews too must have been engaged in this trade: Rabbi Israel Isserlein of Regensburg in Bavaria, the foremost Talmudical authority in Germany during the first half of the fifteenth century, preferred for ritual purposes to the citrons of Rome those that were brought from the Region of Apulia in southern Italy, which latter had, he believed, a finer taste and fragrance.⁶⁰ We have also mentioned (see p. 171) the statement by Ferrarius, in 1646, to the effect that numerous Jewish merchants from Germany, Austria and Poland used to visit each year, towards the beginning of the month of August, the principal citrus-growing centres of the Ligurian coast and of Corfu for the purpose of buying citrons, which they would send out to the Jewish communities of their respective countries. According to Johannes Buxtorf's *Juden-Schül*, first published in Basle in 1603, the German Jews used to obtain their citrons from Spain, "also branches of palms, olive and myrtle, and every year sixteen Jews travel thither, and bring back as many of these goods as they can carry, which they afterwards sell throughout Germany wherever Jews dwell, as I have seen this autumn, that the price of a single citron was as much as four florins."⁶¹ Under the branches that form the roof of the booths [in which during the Festival it is prescribed to have one's meals] the Jews like to hang up citrons and oranges; but some, esteeming these fruits too costly for such a purpose, use pumpkins instead."⁶² Obviously, the oranges were imported by the same merchants who supplied the citrons. A century or so after Buxtorf, 5, 7, and as much as 9 florins were paid in Austria for each citron.⁶³ This trade in citrus fruits was so important that in Austria it was subjected to the payment of heavy customs duties which yielded substantial sums of money to the revenue of the State. For, if about the year 1500 the transit duty enforced in Salzburg had amounted only to either one citron or 8 to 12 Viennese pfennige for each cartload of such fruits,⁶⁴ in 1744 the

⁶⁰ JT, III, p. 296.⁶¹ DO, pp. 483-484.⁶² DO, p. 482.⁶³ JT, III, p. 298.⁶⁴ JT, III, p. 307.

Empress Maria Theresa imposed upon the Jews of the kingdom of Bohemia an annual tax of 40,000 florins for the right to import their citrons,⁶⁵ and in 1797 some Galician Jews offered to pay the State 150,000 florins for a concession allowing them to levy the citron tax for their own benefit.⁶⁶

In the Middle Ages and at least up to the latter part of the seventeenth century, the journey from southern or central Italy, from Greece or from Catalonian Spain, to Germany, Bohemia, or Poland lasted many weeks and the roads were beset with dangers of every sort, so that the profits that could be made from trading in citrons were hardly such as to compensate for the personal risk involved. But that was precisely the reason why helping the Jewish communities scattered far and wide over central and northern Europe to obtain citrons for the Festival was considered a *mitsvah*, a meritorious action which found favour with the Lord and brought credit upon him who performed it. To these citron-merchants the people would give surnames such as *Walich* (for *Welsche*, i.e. Italian)—the name of Elias Walich appears already as that of one of the three Jews to whom Archduke Albrecht III issued in 1389 a passport for Italy⁶⁷—or *Spanier* (i.e. Spaniard), the name of a family which occupied, from 1594 to 1748, a house called the "Golden Apple" in Francfort-on-Main.⁶⁸ More often, however, they would be given a name describing more explicitly the praiseworthy object of their travels, namely *Esroger* (from *etrog*, the Hebrew name for "citron"). Families by the name of *Esroger* are known to have belonged to the Jewries of the Palatinate,⁶⁹ of Southern Germany, and of Bohemia. The inscribed tomb of one Samuel Esroger who died in 1696 is preserved in Francfort;⁷⁰ and in the famous "Old Cemetery" of the Jews of Prague there are still to be seen the tombstones of Muna Esroger (d. 1680), Leiser Esroger (d. 1689), Isaac Esroger (d. 1696), Scheffel Moses Esroger (d. 1710), Meir Katz Esroger (d. 1726), Kalman Katz Esroger (d. 1732), and one which is dated 1735 and inscribed "Kalman Esroger, the son of old Loeb Kalman

⁶⁵ JT, III, p. 297.

⁶⁷ QF, p. 235 (No. 136). JM, IV, No. 2173. ⁶⁸ EZ, p. 442.

⁶⁹ EZ, p. 77.

⁶⁶ ID, art. "Etrog."

⁷⁰ HO, p. 138.

Miroviz: light as an eagle to do the will of the Lord, he risked his life in order to enable the commandment to be observed at its appointed time; from the ivory palaces (i.e. from the East), to make the Lord as well as men rejoice, he brought *etrogim* and new palm-branches. Therefore, may he who dwelled in Tarshish (that is the traveller in the East) rejoice in Paradise together with the righteous ones."⁷¹ It is not improbable that such Jewish families as *Limon*, *Lemoh*, *Pomeranz*, *Zitron* or *Citroen* (Dutch) or *Citrine* (Anglicized old German), or *La Lumia* (old Italian for "citron"), may owe their names to a similar cause.

It was, and still is, a custom with many pious Jews, in order to preserve the precious citron from being damaged, to keep it in a silver box, the shape of which usually follows more or less closely that of the fruit itself. Plate XCVI illustrates two such boxes; they are of German make, and belong to the second half of the eighteenth century.

If, in the beginning, Jewish citron traders seem to have been the only or the principal distributors of citrus fruits in Germany, they appear to have lost this practical monopoly as these fruits became better known and the demand for them increased. Volckamer, writing shortly after 1700 A.D., refers to the oranges and lemons sold in the shops of Italian traders settled in German cities, as well as in the booths set up at German fairs by merchants who used to come up each year from the Tyrol.⁷² It may be that these latter are the Italian pedlars against whom the Senate of Frankfurt, in 1671, warned the population as being suspected of poisoning the people in the towns and villages through which they pass. The actual proclamation containing the warning in question (Plate XCVII), a bizarre document indeed with its official endorsement of mediaeval beliefs in poisoners of wells and of door-posts, runs as follows: "Whereas We the Council of the Holy Empire's City of Frankfurt have received credible reports to the effect that several vagrant evil persons, some of them dressed as pilgrims and carrying tin bottles and pots, and others offering for sale oranges and other Italian fruits, and carrying with them poisonous yellow ointments, spread these on the doors of houses in the towns and villages,

⁷¹ MH, pp. 17, 21 and 22.

⁷² BI, p. 53.

whereof the people who pass in front of or through such doors die within five hours, and also poison many wells, by reason of which many people lose their lives, and how several prisoners in the Electorate of Bavaria have testified and admitted that several hundred such evil persons have been sent from Italy into Germany, and deeming it our duty as far as possible to forestall the dangers arising therefrom. Therefore we recommend most earnestly, under penalty of severe punishment and even of dismissal, to all and every officer of our army, to the clerks at the city-gates, as well as to the village-mayors and innkeepers, to keep a careful watch of such persons on arrival, to question them thoroughly as to where they come from, and, if they cannot show a passport, to refuse them entrance and to send them away, but, if they have a passport or a laissez-passer, to take down their names, to search their baggage and clothes, and if need be to detain them, and duly to report to our Secretariat." This document is practically contemporaneous with a quaint volume on the medical properties of citrus fruits, written by one Hermann Grube, of Luebeck, where the oil of citrus peel is prescribed in the recipe for the preparation of "preservative plague-lozenges to be kept now and then on one's tongue."⁷³

Citrus fruits were being imported into Germany by sea as well as by overland routes. The sea-borne trade was centred in Hamburg, which port received its supplies of oranges mainly from Portugal,⁷⁴ and to a small extent from Curaçao in the West Indies.⁷⁵ From Hamburg the fruit was reforwarded all over the country. Plates XCVIII and XCIX illustrate a lemon-squeezer, apparently of the seventeenth century; it is the only object of its kind known to the author.

In addition to oranges and lemons, whose anti-scorbutic and other qualities were well known—one Daniel Nebel submitted in 1686 to the University of Heidelberg a dissertation on the medicinal properties of these fruits⁷⁶—Germany imported considerable quantities of dried lemon peel,⁷⁷ of lemon juice, and of other citrus by-products. The peel of lemons was used in the manufacture of

⁷³ AN, p. 65.

⁷⁵ BI, p. 194.

⁷⁴ BI, pp. 185 and 193.

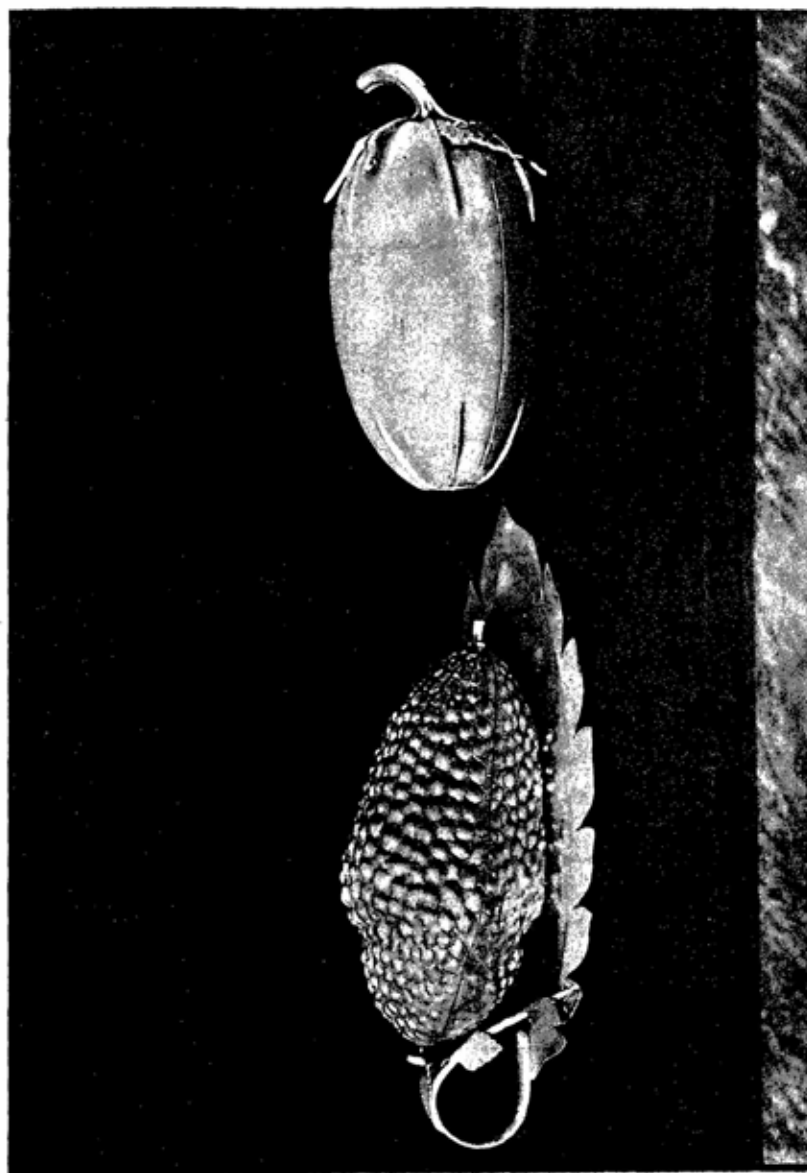
⁷⁶ AY.

⁷⁷ BI, p. 130.

numerous lotions, oils, ointments, balms, and scents.⁷⁸ Lemon juice was imported in barrels from Italy; at times it was found to be mixed with the cheaper juice of sour oranges, the presence of which it was, however, easy to detect owing to the bitter flavour which it conveyed to the mixture.⁷⁹ Citron-oil (*Essentia di Cedro*), which was also shipped from Italy, was in great demand; it was used mainly for flavouring wine and iced drinks in summer.⁸⁰ Other citrus by-products regularly imported into Germany were various scented waters and candied blossoms.⁸¹

It is interesting to follow the evolution of the names by which citrus fruits, and in particular, the orange, have been called in Germany at various epochs. *Zitrone*, which is the colloquial German name of the lemon, appears for the first time, in written documents, in 1561 in the shape of *Citronie*; half a century later (1616), it was written *Citron*, which is practically the same as the present-day *Citrone* or *Zitrone*.⁸² The earliest name for the orange was *Pomerantze* (1490), or, in a somewhat later shape, *Pomeranze* (1539); the word was borrowed from the mediaeval Latin *pomarancia*, which was itself formed by combining the two Italian words *pomo* (apple) and *arancia* (orange);⁸³ in 1545 appears the word *Arancien* without the *pomo*.⁸⁴ The fact that oranges were first called by an Italian name probably justifies the conclusion that it was from Italy that Germany first obtained that fruit. The name *Orange*, still widely used to-day, is not met with before the middle of the seventeenth century, when it occurs as part of the word *Oranien-Apfel* in writings of the years 1665 and 1669.⁸⁵ In due course, it gave way to *Apfelsine*, derived from the Dutch *appelsina* or *appelsien* (meaning China apple). Still unknown to German etymological dictionaries in 1652, it first turns up, around 1700, at Hamburg, where, in 1755, the Dutch word itself (*appelsina*) is mentioned as part and parcel of the popular dialect. By 1770, *appelsina* had generally given way to *Apfelsine*, through the substitution of the German *Apfel* for the Dutch *appel*; in its new form the word had first been recorded in a German-English dictionary of 1716. An unusual form

⁷⁸ BI, p. 130.⁷⁹ BI, p. 130.⁸⁰ BI, p. 112.⁸¹ BI, p. 123.⁸² IL, p. 508.⁸³ IL, p. 354.⁸⁴ IL, p. 337.⁸⁵ IL, p. 337.



Silver Citron-Boxes from Germany, Eighteenth Century.

Photo : R. B. Fleming and Co.] (Jewish Museum, London.)

Ermach Das dem Rath
gehoffen vornehmten Darn glaubw
stills in Palters Kludern und ant
stebet / weils aber / so Pomeranien
Eckten des sich haben / selbe an die
Rut / so vor solchen Eckten sonder oder send
vergesen doch zu letzant das Leben auslösen und
aus Wästen das Landstand geschickt werden selig
schont haben / und Dir dertel dard befohrenden
schien.

Als wollen Dir so wol allen und jeden Officieren
Eand Thum / wie nicht weiniger denen Schultheiss
er ander Eckten / auch respectu des Beruff des
begehren anstimmende Personen flüchtige Ackerer
besten Puff vorlegen können / auch anlassen / so
denns können auffsuchen / ihre Kargen / Fellenen
und des unsern Gangen dard geschickende Ackerer
wissen werden.

Heil. Reichs Statt Frankfurt / von
er Bericht zukommen / dass einige vogrende böse Leute /
den durchschickten bledenen Plakaten und Geschreien de
andere Beldsche Wendische seyl tragen / vergiffte gelbe
maß / Zupfern in Stadt und Dörfern streichen / woson die
posstern / in fluff Stunden sterben / auch viel Frommen
wie solches / und dass der gleichen böse Leute etlich hundert
sangerne im Thurfürstenthums Bayern außgeschagt und
ge nach Mordlust seit vorzukommen Dins schuldig er

den
von unserer Soldatesca / als auch denen Schreibern an den
und Wirtten uff unsern Dorffschafften / des unnachlässig
/ hennit alles Ernste andersolen haben / dass sie auff
den / dieselbe wo sie herkommen / schartff examinieren / und
zu abweisen / da sie aber mit Pässen und Fendern versehen /
auf der beschlagen / auch nach Befindung sie anzuhalten
und ersatten sollen.

und vor Angelegenheit zu führen

Conclusum in Senatu dem 2. Septembris

Anno 1671.

A Proclamation issued by the Senate of Frankfurt in 1671.

(From the Original in the Author's Collection.)



Lemon Squeezer (Closed). Carved Wood, Germany, Seventeenth Century.

(From the Author's Collection.)



Lemon Squeezer (Open). Germany, Seventeenth Century.
(From the Author's Collection.)

is *Sineser Apfel* (Chinese apple), which occurs just once, in 1797. According to the author of an *Encyclopaedia of Economics*, published in 1774, Hamburg and Amsterdam were the principal orange markets for Northern Germany, whilst in Upper Germany this fruit was obtained from Italy; these conditions, which still prevail at present, explain the fact that to this day *Apfelsine* is the name most commonly used in North Germany, whilst the South keeps to *Orange* or, less frequently, *Pomeranze*.⁸⁶

Contrary to what we shall observe when we come to study conditions in Holland and Belgium, citrus fruits have never been used as *motifs* by German artists, unless we include under this description the designers of a number of dishes in Meissen porcelain, such as certain soup-tureens of which the lid has a lemon⁸⁷ or an orange⁸⁸ for handle. The Archaeological Museum of Madrid owns a Meissen dinner-set of which not only the lids of the soup-tureens, but also those of the vegetable-dishes, are clever imitations of lemons with their leaves, flower-buds, and blossoms; the same museum also possesses several Meissen plates decorated with painted representations of ripe oranges and lemons.

THE LOW COUNTRIES: BELGIUM AND HOLLAND.

From at least as early as the eleventh century onwards, a steady and important sea-borne trade was carried on between the cities on the Spanish coastline of the Bay of Biscay—which then belonged to the kingdoms of Leon and Castille—and the principal ports of England, Flanders, and Germany. It is doubtful whether citrus fruits formed part of the cargoes of the Spanish ships of those early days, since the regions of Valencia, Murcia, and Seville, and the Balearic Islands—that is, those districts in which citrus fruits were extensively grown—were not incorporated in the Christian kingdoms of Aragon or Castille until towards A.D. 1250. At all events, it is only towards the close of the thirteenth century that we find, for the

⁸⁶ II, pp. 20-21.

⁸⁷ Victoria & Albert Museum (London No. C. 308-1921).

⁸⁸ Victoria & Albert Museum (not numbered).

first time, citrus fruits specifically mentioned amongst the goods carried by Spanish vessels to northern ports; but the text in question refers to trade with England and not to the Low Countries.

It seems that the beginnings of a regular export trade in citrus fruits from Spain to the Netherlands date from the second half of the fourteenth or the early years of the fifteenth century, that is, from the period which marks the zenith of prosperity for the maritime trade of the Catalans and the Majorcans. The Catalan merchants had their own branch offices and warehouses in the principal ports of the coast of Flanders, in particular at *Sluis* (L'Ecluse); and it is here that we find the earliest evidence of citrus imports from Spain. The Spanish traveller, Pero Tafur, who visited Sluis between 1435 and 1439, has left an enthusiastic description of its wealth and active commercial life; and among the numerous luxury articles of foreign origin which were to be found in the bustling markets of this seaport the first to be mentioned by him are oranges and lemons from Spain: "Surely"—so he writes—"whoever has plenty of money, and desires to spend it, will find in this city all that is produced throughout the world; I have seen there the oranges and the lemons of Castille, which look as if they had only just been picked from the trees. . . ." ⁸⁹

At the time of Pero Tafur's visit to Sluis, the Netherlands formed part of the Duchy of Burgundy. By the marriage, in 1477, of the Duchess Mary, only daughter and heiress of Charles the Bold, to Maximilian of Austria, the Low Countries came under the domination of the Hapsburgs, who governed Belgium and Holland through the agency of regents. From 1530 to 1555, this position was filled by Charles V's sister Mary, the widowed queen of Hungary, who had her residence in the small but strongly fortified town of Binche, between Mons and Charleroi. It is here that this princess gave, in 1540, in commemoration of the conquest of Peru by the Spaniards, a series of feasts so splendid that to this day the Spanish language has preserved the memory of their unparalleled magnificence in the popular expression *mas bravas que las fiestas de Bainz* (i.e. more beautiful than the feasts of

Binche). It seems that at these feasts the public was offered the spectacle of a pageant purporting to reproduce a battle between the Spanish conquistadores and the native Peruvians, and that oranges were the missiles used in this fight. For it is in these celebrations of 1540 that the historians of the city see the origin of the famous Carnival of Binche, which annually draws to that otherwise unimportant town of the Belgian mining country tens of thousands of visitors. The principal feature of this carnival is the procession of four hundred personages popularly called "Gilles," fanciful impersonations of the Inkas, who wear gold-embroidered costumes covered with precious lace, hats adorned with many-coloured ostrich feathers of gigantic size, masks and green spectacles, and who carry baskets full of oranges (Plates C and CI) with which they subsequently, in the course of a sham battle, bombard the stone fronts and the iron window-bars of the houses.

The Spanish régime in the Netherlands—especially through the presence of a Spanish Court, a Spanish army, and a host of Spanish officials—did a great deal towards popularizing Spanish customs and fashions, and even Spanish food. Speaking of the so-called "Spanish Fury" at Antwerp, in 1576, when that city was sacked by mutinous Spanish troops, the historian van Meteren (A.D. 1608) ascribes the revolt of the army to their anger on finding that their officers were deducting from the soldiers' pay the sums claimed by various towns for services rendered and for foodstuffs supplied. The sums so deducted must have run, indeed, into considerable figures, if it is true, as van Meteren reports, that, wherever they happened to be quartered, the Spanish *soldatesca* insisted on being fed with "chickens, partridges, capons, lamb and veal and two kinds of wine, as well as with sauces, capers, olives, lemons (*cytroenen*), oranges (*orange-appelen*), and all sorts of spices and sweets; even their dogs had to be fed with white bread, others had the feet of their horses washed in wine."⁹⁰ The picture by C. Van der Lanen (early seventeenth century) at the Prado in Madrid, which represents a "Banquet of Soldiers and Courtesans," with

⁹⁰ KM, Book V, fol. 110.

its roast fowl, lemons and oranges, seems to be inspired by this passage from van Meteren.

It may be inferred that, towards the end of the sixteenth century, citrus fruits, whilst still comparatively expensive, could be obtained without great difficulty in many Flemish towns. This is also implicitly confirmed by a statement in Nunez de Leão's "Description of the Realm of Portugal" published in 1610, where it is said that enormous quantities of oranges and lemons (*infinidade de laranjas e limoes*) were being exported from that country to Flanders and England;⁹¹ similarly, in 1676, the Dutch botanist Commelyn reports that the Netherlands receive annually, from Portugal and Spain, large quantities of oranges, lemons and citrons.⁹²

Italy did not apparently send fresh citrus fruits, but dried peels, which were used for flavouring wine and spirits. Brandy, in which lemon peel had been allowed to macerate for some time, was called "lemon-water." This was in great demand, as well as so-called *oranje-bitter*, a sweet liqueur flavoured with orange peel. For the manufacture of these drinks, so writes Commelijn, many thousands of pounds of orange and lemon peel were being imported each year from Italy.⁹³

Of the great popularity of citrus fruits in the Low Countries, and of the many different uses to which they are put, the written records teach us very little. But what the writers of books fail to tell us, the Dutch and Flemish painters of the seventeenth century—those unrivalled masters in the representation of "still lifes" and of the customs and manners of their people—have recorded in many hundreds of pictures which are found to-day dispersed through numerous public and private collections all the world over.

In several allegorical pictures by Peter Paul Rubens (1577-1640), depicting the benefits which peace confers upon a country, oranges, citrons and lemons appear, together with grapes, apples and melons, as symbols of wealth. Thus, in that artist's "Peace driving away the Horrors of War," at the London National Gallery (No. 46), a citron and an orange figure

⁹¹ IX, Chap. xxxiii (fol. 61, vo).

⁹³ AH, p. 46.

⁹² AH, p. 2.



"Carnival of Binche." A Famous Poster.



Carnival at Binche : "The Gilles" with their Baskets of Oranges.

in a bunch of fruits held by Pan and Eros (Plate CII); two citrons and an orange are found in another version of the same subject at the Aeltere Pinakothek in Munich (No. 343); citrons and lemons are amongst the contents of the giant cornucopia which a nymph holds in her arm, in "Nymphs and Satyrs" (Plate CIII) at the Prado in Madrid (No. 1666); a huge lemon figures amongst the gifts of the Fruit Goddess in "Ceres and Pomona," by Rubens and F. Snijders, also at the Prado (No. 1664). The fact that, in all these pictures, so little emphasis is put on the oranges, lemons and citrons as compared with the native fruits of Belgium, certainly suggests that, shortly after A.D. 1600, citrus fruits had become a relatively common feature in the shops and on the markets of that country.

The "Fruit-Seller" (Plate CIV) by Frans Snijders, of Antwerp (1579-1657), at the Prado in Madrid,⁹⁴ shows oranges and lemons as part of the ordinary stock-in-trade of fruit shops just as much as melons, grapes, pears, apples, peaches, cherries, nuts and artichokes; they occupy a conspicuous place in the same artist's "Fruit and Vegetable Shop" at the Aeltere Pinakothek in Munich.⁹⁵ On Gerard Dou's (1613-1675) "At the Grocer's" at Buckingham Palace, in London, a dish with four lemons occupies the centre of the counter. Lemons and oranges figure amongst the provisions which fill the well-appointed larders represented in Snijder's "Game" at the Royal Museum of The Hague⁹⁶ and in his "Dogs in Possession of a Larder" at the Prado,⁹⁷ in A. van Utrecht's (1599-1652) two pictures of "Larders" in the same museum,⁹⁸ one of which—reproduced in Plate CV—has a whole basketful of lemons and oranges with an open pomegranate on top, and in Willem van Aelst's "Provisions," dated 1652, at the Pitti Gallery in Florence.⁹⁹ Some people would keep their supply of citrus fruits in the kitchen itself—as in the younger Teniers' (1610-1690) "Kitchen" at the Museum of the Hermitage in Leningrad—or even in their living rooms, as in Pieter Janssens' (Amsterdam, second half of the seventeenth

⁹⁴ Catalogue No. 1757.⁹⁵ No. 4278.⁹⁶ No. 258.⁹⁷ No. 1750.⁹⁸ Nos. 1851 and 1852.⁹⁹ No. 454.

century) "Woman Reading" at the Old Pinakothek in Munich.¹⁰⁰

Hundreds of pictures illustrate the many different manners in which oranges and lemons were used on the table, or in the preparation of various dishes. Willem Claesz Heda's (1594-c. 1680) "Remains of a Breakfast," dated 1629, at the Royal Museum of The Hague,¹⁰¹ exhibits slices of lemons next to a dish containing a herring; another picture by the same artist, described as "A Study of Still-Life" (Plate CVI), at the London National Gallery,¹⁰² shows a half-peeled lemon in conjunction with a crab. Abraham Hendriksz van Beyeren (1620-c. 1674) depicts lemons with shrimps,¹⁰³ or with lobsters.¹⁰⁴ The latter is also the case in a picture by J. van Son (1623-1667) now in one of the Halls of the Chapter at the Convent of the Escorial, and in Johannes Hannot's "Fruit and Still Life" at the Museum of Kassel,¹⁰⁵ whilst Jan Van Kessel, of Antwerp, has assembled, in a picture at the Dresden Gallery,¹⁰⁶ dated 1654, lemons and a lobster, a crab, and shrimps. Lemons go with oysters in J. Van de Hecke's (Flemish School, 1620-1684) "Oysters and Fruit" of 1643 in a private collection in Hampstead,¹⁰⁷ in Jean Paul Gillemans's "Fruit and Oysters" of 1662 at the Royal Museum of Brussels,¹⁰⁸ in Jan Jansz. van de Velde's "Still Life" of 1656 at the London National Gallery,¹⁰⁹ in J. van Son's "Bodegon" (i.e. Tavern) at the Prado,¹¹⁰ and in several pictures by Joris Van Es, of Antwerp (1596-1666), two of which are also at the Prado¹¹¹ and one in the private collection already referred to, at Hampstead.¹¹² A lemon with oysters and a snail form the main subject of David de Heem's (1570-1632) "Fruit and Flowers" at the London National Gallery;¹¹³ his son, Jan Davidsz de Heem (1606-1684) has painted oysters and a lobster with lemons and oranges,¹¹⁴ a lobster and a

¹⁰⁰ No. 284.

¹⁰¹ No. 596.

¹⁰² No. 1469.

¹⁰³ Royal Museum at The Hague, No. 665.

¹⁰⁴ Royal Museum in Brussels, No. 36; Emperor Frederick Museum in Berlin, No. 983a.

¹⁰⁵ No. 439.

¹⁰⁶ No. 1221.

¹⁰⁷ QA, Plate 39b.

¹⁰⁸ No. 189.

¹⁰⁹ No. 1255.

¹¹⁰ No. 1774.

¹¹¹ Nos. 1504 and 1505.

¹¹² QA, Plate 31.

¹¹³ No. 2582.

¹¹⁴ Wallace Collection, London, Nos. 76 and 175.



Peter Paul Rubens: "Peace Driving Away the Horrors of War."
(National Gallery, London.)



Peter Paul Rubens: *Nymphs and Satyrs*.

(*Prado Museum, Madrid.*)

lemon,¹¹⁵ oysters and a lemon,¹¹⁶ snails and a lemon.¹¹⁷ In all these pictures, the lemons or sour oranges are shown on a table with the lobsters, the oysters, the crabs, the shrimps, ready for being eaten. In Jan Steen's (1626-1679) admirable "Inn," at the Royal Museum of The Hague¹¹⁸, a servant girl, kneeling in front of the hearth, is shown pressing the juice of a lemon on oysters which are roasting over the fire (Plate CVII).

But, of all the Dutch or Flemish pictures of oranges and lemons, the most interesting are perhaps those in which these fruits are represented together with a glass of wine or brandy. A "Still-Life" by Abraham Hendricksz van Beyeren (Dutch School, c. 1620-c. 1674), at the Royal Museum of The Hague,¹¹⁹ shows a lemon next to an empty *roemer* (claret-glass), and, close to them, a long Venetian glass half filled with wine; a picture by Pieter Janssens (Dutch School, second half of seventeenth century), in a private collection in Hampstead,¹²⁰ represents, on a pewter plate, a glass of wine together with two sour oranges and half a lemon. The same theme is found in several works by Willem Kalff, of Amsterdam (1621-1693): at the Royal Museum of the Hague¹²¹ we see a bottle of wine, a *roemer*, and a lemon; whilst at the Kaiser Friedrich Museum in Berlin¹²² it is a glass of wine and a sour orange.

In the pictures just mentioned, the fruit is not peeled; more often, however, roughly one half of it is, the coil of peel being left attached to the fruit. So it is in Pieter Claesz's "Lemons and Still Life" of 1627 in a private collection at Maartensdijck (Holland);¹²³ in David de Heem's "Fruit" at the Royal Museum in Brussels;¹²⁴ in pictures by his son Jan (1606-1684) at that same museum,¹²⁵ at the Wallace Collection (Plate CVIII), at the Fitzwilliam Museum in Cambridge,¹²⁶ at the Royal Museum in Antwerp;¹²⁷ in Willem Claesz Heda's Still

¹¹⁵ Rijksmuseum Amsterdam, No. 1124; Royal Museum, Brussels, No. 505.

¹¹⁶ Royal Museum, Antwerp, No. 656.

¹¹⁷ Royal Museum, The Hague, No. 48.

¹¹⁹ No. 665.

¹²⁰ QA, Plate 53a.

¹²² No. 948d.

¹²³ QA, Plate 22a.

¹²⁵ No. 505.

¹²⁶ No. 47.

¹¹⁸ No. 170.

¹²¹ No. 666.

¹²⁴ No. 205.

¹²⁷ No. 656.

Lifes at the Aeltere Pinakothek in Munich¹²⁸ and at the National Gallery in London (Plate CVI);¹²⁹ in Jean Paul Gillemans' (Flemish School) "Fruit and Oysters" of 1662 at the Royal Museum in Brussels;¹³⁰ in Nicholas van Gelder's (Flemish School) "Fruit and Still Life" of 1664 at the Rijksmuseum in Amsterdam;¹³¹ in Christiaan J. Striep's (Dutch School, 1634-1673) "Still Life and Fruit" at the Museum in Vienna;¹³² in Pieter Nason's (Dutch School, 1612-c. 1690) "Fruit and Still Life" at the Kaiser Friedrich Museum in Berlin;¹³³ in Abraham Mignon's (Dutch School, 1659-1697) "Fruit" (Plate CIX) at the Uffizi in Florence;¹³⁴ in pictures by Willem Kalff at the Rijksmuseum in Amsterdam, at the Kaiser Friedrich Museum in Berlin,¹³⁵ and in a private collection of that same city;¹³⁶ and in many other works of the same kind.

The reason for the constantly recurring presence, in Dutch and Flemish pictures, of oranges and lemons together with glasses of wine or brandy, is to be found in the practice, common in the Low Countries at the time, of flavouring alcoholic drinks by means of the juice of these fruits and the essential oils contained in their rind. It is quite possible that the Dutch borrowed this idea from China.

Speaking of the Hsiang Yuan—i.e., Fragrant Globe-orange—Han Yen-Chih had written in A.D. 1178 that "after drinking wine, the people of Heng-yang take a pair of scissors and cut slices of this fruit which has a flavour equal to that of fresh Ch'eng orange"¹³⁷ (a bigarade, with sour juice and bitter peel). On a commercial basis, the same object was achieved in Holland by the manufacturers of "bitters," by letting dried peel of lemon or orange—which was imported wholesale *i.a.* from Italy—macerate in gin or other such spirits; thus the liqueur which to this day is called Curaçao was originally made in Holland with the peels of Curaçao oranges. It is thanks to the Dutch painters of the seventeenth century that we know how this flavouring of spirits and wine was being done by means

¹²⁸ No. 283.¹²⁹ No. 1469.¹³⁰ No. 189.¹⁸¹ No. 967.¹⁸² No. 1372.¹⁸³ No. 977.¹⁸⁴ No. 1115.¹⁸⁵ Nos. 948f and 948g.¹⁸⁶ QA, Plate 56c.¹⁸⁷ AO, p. 27.



F. Snijders : The Fruit-Seller.

Photo: J. Ruiz Vernacci]

(Prado Museum, Madrid.)



A. van Utrecht: Larder.

Photo: J. Ruiz Vernacci]

(Prado Museum, Madrid.)



Willem Claesz Heda: *A Study of Still Life*.

(*National Gallery, London.*)



Jan Steen : The Inn.

(Mauritshuis, The Hague.)

Photo: Bruckmann]

of fresh fruits in the household or the public-house, at the last moment.

It seems that two alternative methods were in use. The more common one, apparently used for wine only, consisted in not only flavouring the wine with the essential oil of the peel, but also mixing with it the juice itself of the lemon or orange: "How greatly is the taste of wine improved if one adds to it a drop of orange juice, or if one rubs the beaker's rim with the peel of an orange," wrote in 1651 (see p. 167) the Italian Tanara, apparently inspired by the example of the Dutch, who, in order to achieve both objects at one and the same time, namely to flavour the wine both with the juice and the bitter but pleasantly scented oil of the rind, seem to have invented a method of their own: they separated, over about half the surface of the fruit, the peel from the pulp, in the manner depicted in the pictures last mentioned: the complete orange or lemon was then placed inside a glass, mostly of the *roemer* type, and covered with wine, the loose portion of the peel being used to rub with it the rim of the glass before drinking. This method is illustrated in Charles van Dielaert's "Still Life" of 1666 at the Rijksmuseum in Amsterdam,¹³⁸ in Simon van Luttichuys' (1610-1662?) "Still Life and Roses" belonging to the private collection in Hampstead already mentioned before,¹³⁹ in one of Jan Davidsz de Heem's admirable Still-Lives of the Wallace Collection¹⁴⁰ (such as reproduced in Plate CVIII), in a canvas by Barent van der Meer (Dutch School, second half of the seventeenth century) at the Aeltere Pinakothek of Munich,¹⁴¹ and in many other similar pictures. When the object was the instant preparation of an appetizing "bitter," the method seems to have consisted, either in merely squeezing an orange or lemon over a glass of brandy or sweet liqueur so as to cause the essential oil to spurt into the liquid, or in stirring the contents of the glass with a knife that had previously been used to scratch the surface of the fruit and thus tear the oil-cells of the rind. In Jan Vermeer's (1632-1675) "Girl with the Wineglass" at the Herzog Anton Ulrich Museum of Brunswick (Plate CX) we notice, on the table, two lemons—one entire and the other with the peel

¹³⁸ No. 779a.

¹⁴⁰ No. 76.

¹³⁹ QA, Plate 63a.

¹⁴¹ No. 6599.

half removed—and a small jug, whilst the young lady in Pieter de Hooch's (1629-1677) "La Collation" of the London National Gallery¹⁴² (Plate CXI) is engaged in stirring the contents of a glass of liquor by means of the knife with which, apparently, she has only just scratched the peel of an orange lying on the richly embroidered table-cloth.

All that citrus fruits meant to the Dutch and Flemish epicures of the sixteenth and seventeenth century is eloquently summed up by Jan Breughel, known as "Velvet" Breughel, (1568-1625) in two pictures—now at the Prado in Madrid—of the series "The Five Senses," which he painted, at Antwerp, for the archdukes Albert and Isabella. In the one,¹⁴³ entitled "Taste," in which he represents the choicest of foods, the only fruits shown on the richly furnished dinner table are apples, oranges, and lemons. In the other,¹⁴⁴ described as "Hearing, Taste, and Touch," the table is covered with beautifully carved gold and silver dishes containing roast turkey and partridges, shrimps, lobster and crayfish; of the two ladies engaged in partaking of the princely meal, one is listening to the strains of the song which a handsome youth plays on the lute, whilst her companion is eating oysters and drinking white wine from an enormous *roemer*; a lemon, cut in two, is placed on the table-cloth next to the dish of oysters and the wine-glass; the only fruits on the table are a dish of oranges and lemons, and from the background of the picture a maid-servant is coming forward, carrying a large tray full of sweet oranges. Oranges and lemons did, indeed, reign supreme amongst the favoured dishes of the wealthy bourgeoisie of the Netherlands in the sixteenth and seventeenth centuries.

ENGLAND.

It was in Palestine that Englishmen appear to have first become acquainted with citrus fruits. The earliest mention of them in British history occurs in the Chronicle of Geoffroy de Vinsauf, where it is related that Richard Coeur-de-Lion and his English crusaders spent the winter 1191-1192 in camp in the citrus groves of Jaffa and refreshed themselves with the luscious fruits.¹⁴⁵

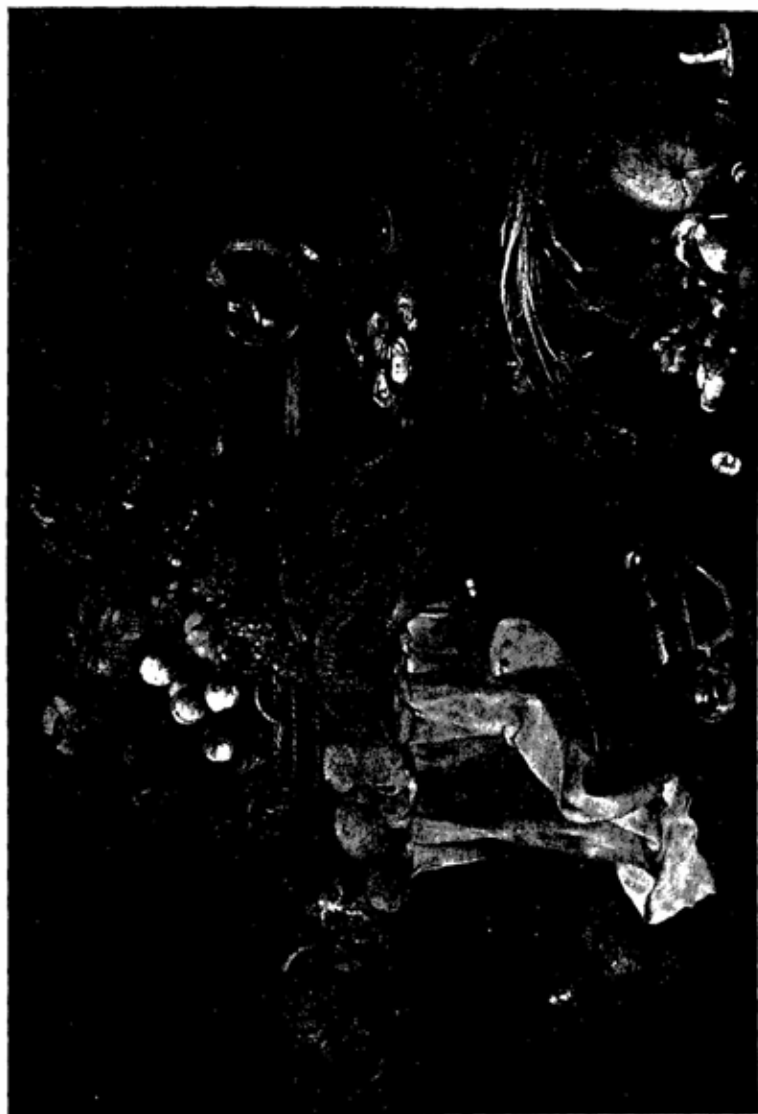
In England itself, the earliest mention of the use of citrus fruits occurs towards the close of the thirteenth

¹⁴² No. 3047.

¹⁴⁴ No. 1404.

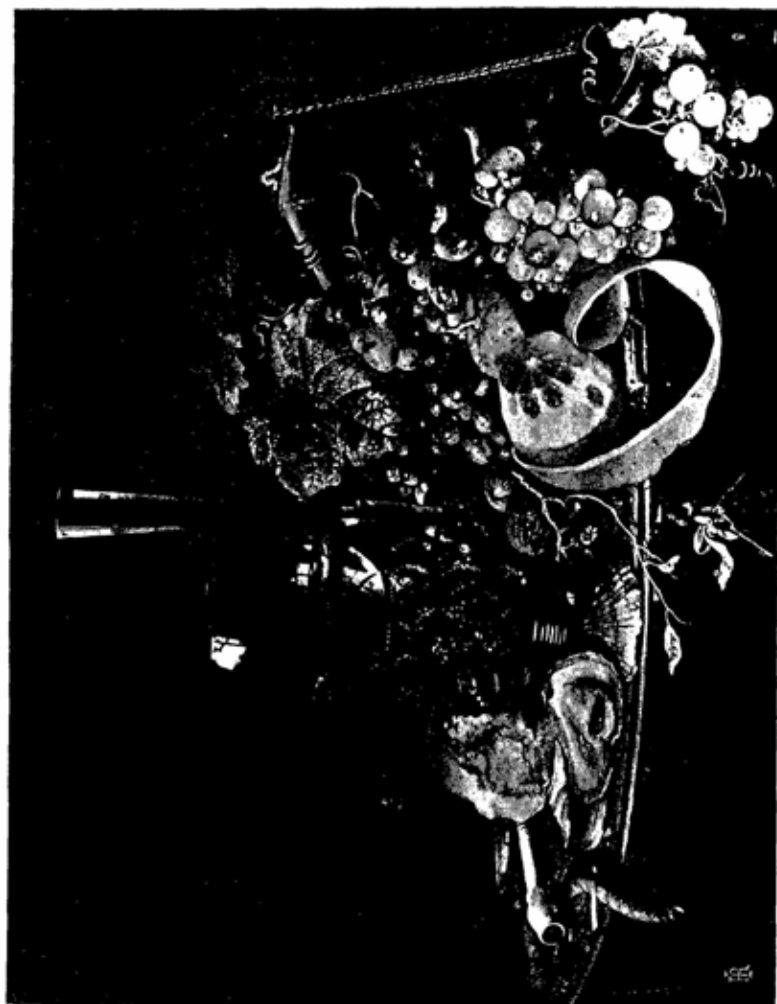
¹⁴³ No. 1397.

¹⁴⁵ PR, p. 247.



Jan Davidsz de Heem : Still Life.

Photo : Henry Dixon and Son, Ltd.] (Wallace Collection, London.)



Abraham Mignon: Fruit.

(Uffizi Gallery, Florence.)

Photo: Alinari]

century. Queen Eleanor, the wife of Edward I, was a daughter of King Alfonso X of Castille, the conqueror of Seville, and was obviously familiar from childhood with the many uses to which citrus fruits could be put; Edward himself must have been no less acquainted with their qualities, since his marriage with Eleanor in 1254 had actually taken place in Spain. Moreover, both the King and the Queen had spent about two years, from 1271 to 1273, in Palestine, where they stayed at Acre, at the time an important centre of orange culture. There is therefore little cause for surprise to find in the "Wardrobe Book" for the eighteenth year of the reign of Edward I (A.D. 1290), which is kept in the Tower of London, an entry under the title "Spices and other empta of the Queen," stating that, out of the cargo of a large ship that had come into Portsmouth, the Queen bought a basket of Seville figs, a bale of dates, 230 pomegranates, 15 citrons (*pomis cedrinis*) and 7 oranges (*pomis de Orange*). One wonders whether there is more than an accidental similarity of sound between the name of the fruit and the names of the honest man Richard Orange, mentioned in Archbishop Peckham's Letters¹⁴⁶ in the reign of the same Edward I, or of the villain Orangia de Chercheyard, who was hanged in England in 1307 for a crime, the exact nature of which is not recorded by the chronicler.¹⁴⁷ In 1399, oranges, described as "pomedoreing" (for *poma de Orange*) were served among the delicacies offered to the guests at the coronation feast of Henry IV,¹⁴⁸ whose queen was a daughter of Pedro the Cruel of Castille and Maria Padilla; and at the banquet which the king gave, a few years later, to "the heralds and french men when they had jousted in Smithfield," the last of the three courses comprised, together with many other luscious dishes, stewed larks, venison, quails, rabbits, and plovers, served with oranges (*pomerings*).¹⁴⁹ The next reference concerning the use of oranges by royalty in Great Britain appears to be furnished by an entry in the Accounts of the Lord Treasurer of Scotland, where, under date of April 24, 1497, mention is made of the payment of 3 shillings "for bering of the appill oreynzeis to the house (in Leith) fra the schip" and 12 pence "for ane smal barel to send apillis oreynzeis to

¹⁴⁶ QD, p. 194.¹⁴⁸ CA, p. 47.¹⁴⁷ QD, p. 194.¹⁴⁹ LG, p. 4.

Falkland and Sanctandrois (St. Andrews) to the King.”¹⁵⁰ The ship from which the oranges were obtained must have been a Spanish ship, and there may possibly be some connection between this gift of fruit—for the Lord Treasurer’s Accounts make no mention of any payment made for the oranges themselves—and the fact that it was precisely in 1497 that the Spanish ambassador negotiated a peace between James IV of Scotland and Henry VII of England. It is also stated in G. W. Johnson’s *History of English Gardening*, published in 1829, that “it is upon record that the Leathersellers’ Company gave six silver pennies for one lemon, which was served up at a civic feast given to Henry VIII and Anne Bulleyn, in honour of the coronation of the latter,”¹⁵¹ but I am unaware as to the source where Johnson found his information: “The Noble Tryumphaunt Coronacyon of Quene Anne, Wyfe unto the moost Noble Kynge Henry the VIII,” printed by Wynkyn de Worde in London in the year 1533, makes mention only of a “voyde (collation) of spyce plates and wyne”; nor do the records of the Leathersellers’ Company for the year of Anne Boleyn’s coronation (1533) contain any reference to the purchase of a lemon for presentation to the Queen.¹⁵²

But the fifteenth century had witnessed a great expansion of England’s foreign commerce, and the ports of Portugal in particular swarmed with English traders: “Portugalers with us have trouthe in hand: Whose Marchandy commeth much into England” wrote the anonymous author of the “*Libellus de politica conservativa Maris*” in 1436 or 1437.¹⁵³ Portugal was then the great orange-growing country, and so we find towards the end of the fifteenth century oranges and lemons becoming already a fruit of the wealthier classes in England, and not only of the King himself. The Account Books of the Wardens of the Carpenters’ Company for the first half of the sixteenth century contain a number of references to the purchase of oranges for presentation to the Master

¹⁵⁰ BM, I, p. 330.

¹⁵¹ IF, p. 55.

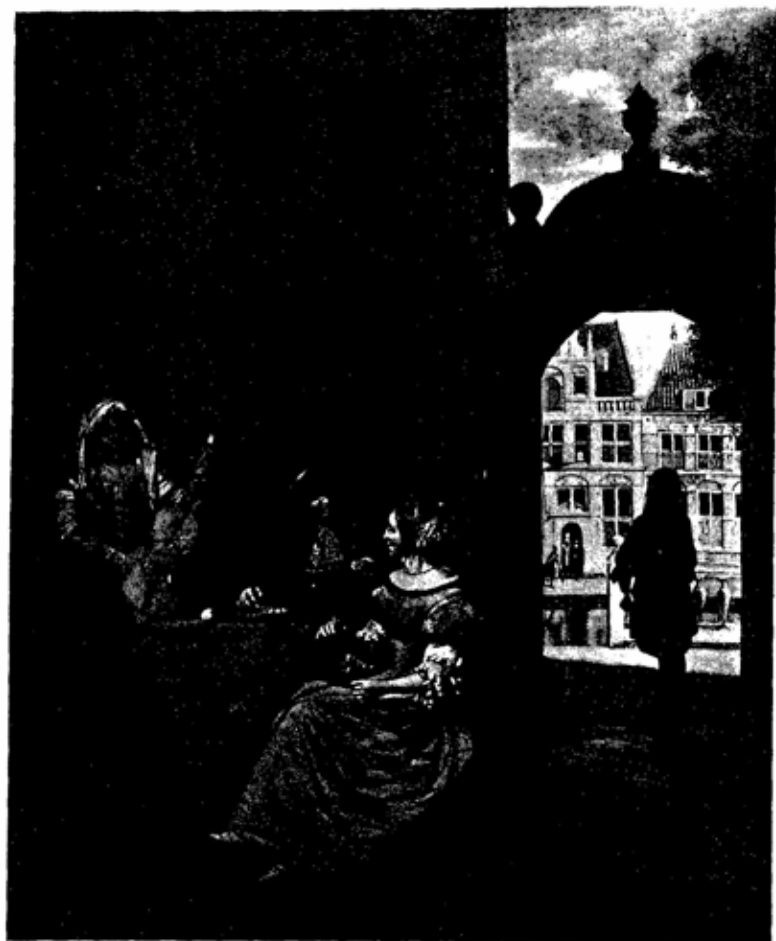
¹⁵² I am indebted for this information to Mr. George F. Sutton, Clerk to the Leathersellers’ Company, who, at my request, has been kind enough to submit the Company’s records to a careful search.

¹⁵³ JL, Vol. I, p. 177.



Jan Vermeer: Girl with Wine-Glass.

(Herzog Anton Ulrich Museum, Braunschweig.)



Pieter de Hooch: *La Collation*.

(National Gallery, London.)

and Wardens: at Candlemass, A.D. 1501, the sum of 2d. had sufficed to buy oranges for all the wardens; three years later, one had to pay 3d.; and in 1546, the corresponding entry amounts to 9d.¹⁵⁴ Oranges had apparently become less plentiful on account of the war with France (1544-1546) and the resulting dangers to shipping.

It is quite evidently to this ancient custom of presenting citrus fruits to the officers of important corporations that we must look for the ultimate origin of Oranges and Lemons Day, one of London's quaintest ceremonies. Between the Inns of Court and the river Thames there stands, in the midst of the Strand—one of the City's most busy thoroughfares—the small church of St. Clement Danes; originally built by Danes who, having married English wives, were permitted by Alfred the Great to remain in Anglia, the church was rebuilt in the seventeenth century by London's greatest architect, Sir Christopher Wren. Its clock-tower contains a peal of bells which play, *i.e.*, the tune of a very ancient nursery-rhyme known to every English child, and which is called "Oranges and Lemons":—

Oran-ges and le-mons, says the bells of 'St. Clemen's'; You owe me five shillings, says the
D.C. When will that be? says the bells of Sep - ney; I do not know, says the
bells of St. Mar-tin's; When will you pay me, says the bells of Old Bai - ley;
great bell of Bow.
D.C.
When I grow rich, says the bells of Shoot - ditch; Here comes a can-dle to
light you to bed, And here comes a chop-per to chop off your head.

Each year, towards the end of March, a children's service is held at St. Clement Danes, when, the interior of the church being profusely decorated with citrus fruits (Plate CXII), the carillon plays the ancient tune about oranges, lemons, candle, and chopper; and later on, as the children leave the church, each of them is handed an orange and a lemon provided by the Danish colony in London. "Oranges and Lemons Day" at St. Clement Danes is a very recent introduction, having been first celebrated in 1920;¹⁵⁵ but it is only the modern revival, in a somewhat amended form, of an ancient parish custom in accordance with which in Clements Inn—that section of the Inns of Court which is situated immediately opposite the church of St. Clement Danes—the Attendants once every year used to call on each of the residents of the Chambers in the Inn, presenting them with oranges and lemons and expecting some gratuity from them in return. When and where the custom originated we do not know; but it is perhaps not without significance that the church of St. Clement Danes stands close to the spot which long ago was "Surrey Steps," the mooring place of fruit boats for Covent Garden and Clare markets.¹⁵⁶ There may also be more than mere coincidence in the fact that the living of St. Clement's is in the gift of the Earls of Exeter, as representatives of the elder branch of the Cecils, it having been originally granted by Queen Elizabeth to her minister William Cecil, afterwards Lord Burghley, who—as has been related before—was thought to have been the first man to attempt the growing of oranges and lemons in England; the nursery rhyme as well is believed to have arisen in Tudor times.

The Paston letters contain a complimentary note addressed in April 1490 by one Lumen Haryon to Sir John Paston, with a present of wine and oranges for Lady Paston, in acknowledgment of some services performed by Sir John to the writer: "...I send my Lady a little piece of Rhenish wine of the best, of ten gallons...and halfe a hondryd orrygys I schall send hyr mor A geyns pencost yt sche may have fresche" (and half a hundred oranges; I shall send her more against Pentecost, that she may have fresh ones).¹⁵⁷ Shakespeare speaks of the "orange-tawny"

¹⁵⁵ FZ, p. 71. ¹⁵⁶ FZ, p. 81. ¹⁵⁷ LS, Vol. V, pp. 380-381.



Interior of St. Clement Danes Church, London, on "Oranges and Lemons Day."

Photo: Bedford Lemere and Co.]

S A L E
BY THE
C A N D L E,
AT
GARRAWAY'S Coffee-House,
Exchange-Alley, Cornhill,

On Monday the 24th of March,
1776, at Five o'Clock in the
Afternoon,

XXXXXXXXXXXXX
A choice Parcel of Seville Sour
Oranges, some China, and Le-
mons, just landed,
XXXXXXXXXXXXX

C O N D I T I O N S of S A L E.

THE highest Bidder, in due Time, to
be deemed the Buyer, who is to pay
down a Deposit of 25 per Cent. on the
Amount of each Lot, and Six-pence per
Lb to the Broker to bind the Bargain.

The Lots to be taken away, with all
Faults, at the Buyer's Expence, in three
Days from the Day of Sale, and the Re-
mains of the Purchase Money to be
paid at the Delivery of the Lots.

Any Lot or Lots not taken after the
Time limited, the Deposit Money to be
refunded to the Vendor, and the
Lot or Lots not to be sold for the same
Price as Law or Equity; and the Lots shall
be sold, and all Charges shall be paid by
the first Purchaser.

Lastly, If any Difference arise in the
Sale, the Lot is Disputed shall be put up
again.

N. B. To be taken as they rise from
the Fire.

Lots

1	5 Chalks four Oranges
2	10 do
3	10 do
4	10 do
5	5 do
6	10 do

Total 50 do

By Order of the
Messrs. Garraway & Co.
Messrs. White & Son
Messrs. White & Son
Messrs. White & Son

A Sale by the Candle Bill of 1776

(From the Original in the Possession of Messrs. White and Son, Ltd., London.)

beard of a man,¹⁵⁸ and of the orange-tawny bill of a cock;¹⁵⁹ in "Much Ado About Nothing" he describes the Count, Claudio, as "neither sad, nor sick, nor merry, nor well; but civil . . . civil as an orange, and something of that jealous complexion,"¹⁶⁰ and likens to a rotten orange a person who, whilst blushing like a maid, is "but the sign and semblance of her honour . . . her blush is guiltiness, not modesty;"¹⁶¹ in "Coriolanus," he refers to "orange wives" in a manner which seems to imply that in his days these itinerant fruit-sellers had become familiar figures in the streets of London.¹⁶² John Gerarde's "Herball," published in 1597, contains fairly accurate descriptions not only of the citron, the lemon, and the sour orange, but also of the sweet orange and even of the shaddock, which was then known as the "Assyrian Apple" or "Adam's Apple."¹⁶³ The acclimatization in Portugal, in the course of the sixteenth century, of the sweet China orange led to a further increase in orange imports into England. A Portuguese author, Nunez do Leão, writes in 1610 that enormous quantities of oranges and lemons are being carried to England by Flemish and other foreign merchants;¹⁶⁴ John Rea (1665) says that "although the [orange] tree be rare and strange to many, the fruit is common and well known to all";¹⁶⁵ and in Bishop Thomas Pratt's History of the Royal Society, published in 1677, it is reported that "the orange of China being of late brought into Portugal, has drawn a great renew every year from London alone."¹⁶⁶ The second war between England and the Netherlands (1665-1667) caused a temporary interruption to this trade: "China oranges—observes Pepys—now a great rarity since the war, non to be had."¹⁶⁷ But as soon as peace was re-established and shipping again became safe, China oranges from Portugal became more plentiful in England than ever before, the origin of the Queen—a princess of the House of Braganza—contributing much to stimulate the fashion for things Portuguese. In 1685, Sir William

¹⁵⁸ OA, Act II, Scene I.

¹⁶⁰ OB, II, i, 307.

¹⁶² NY, Act II, Scene i, 79.

¹⁶⁴ IX, Ch. XXXIII (fol. 61).

¹⁶⁶ OI, Part III, Sect. 28 (p. 387).

¹⁵⁹ OA, Act III, Scene I.

¹⁶¹ OB, IV, i, 32.

¹⁶³ GM, pp. 1279-1281.

¹⁶⁵ ML, p. 16.

¹⁶⁷ LW, V, p. 241 (6th March, 1666).

Temple, referring to the oranges grown by himself on his own trees, praised them as being "as well tasted as are commonly brought over, except the best sorts of Sevil and Portugal."¹⁶⁸

If Charles II's queen was born in an orange-country, his most famous mistress was connected with the fruit through her erstwhile profession. Nell Gwynn is said to have been born in the so-called Coal Yard of Drury Lane, a low alley on the east side of that famous street, next to the notorious and fashionably inhabited Lewknor Lane, where young creatures were inveigled to infamy, and, dressed as orange-girls, were sent out to sell fruit and attract attention in the adjoining theatres. It was in Drury Lane Theatre that Nell Gwynn started her career as an orange-girl, holding her basket of golden fruit covered with vine leaves, and taking her stand with her fellow fruit-women in the front row of the pit, with her back to the stage.¹⁶⁹ The mistress or superior of the girls was familiarly known as Orange Moll, and filled the same sort of office in the theatre that the Mother of the Maids occupied at court among the maids-of-honour.¹⁷⁰ Many a passage in the comedies of the time contain references to the doings of the orange-girls and their aristocratic clients.

D'Urfey, in the prologue to "A Fool's Preferment" (1668), writes that

"The noble peer may to the play repair,

"Court the pert damsel with her China ware—

"Nay, marry her—if he please—no one will care;"¹⁷¹

and in the prologue to another of his plays, "Don Quixote" (1694), we are further told that the quality of the fruit offered for sale does not seem to have been a matter of particular importance to the clients, for

"The orange-miss that here cajoles the Duke

"May sell her rotten ware without rebuke."¹⁷²

Samuel Pepys tells us in his Diary (11th May, 1668) that one of the orange-women at Drury Lane Theatre tried to impose upon him by affirming that she had delivered a

¹⁶⁸ OV, p. 38.

¹⁶⁹ EO, pp. 2, 5, 6.

¹⁷⁰ EO, p. 17.

¹⁷¹ Quoted by EO, p. 18.

¹⁷² Quoted by EO, p. 18.

dozen oranges to some ladies in a box in accordance with his order, "which was wholly untrue, but yet she swore it to be true." He denied the charge, and would not pay, but "for quiet" bought four shillings' worth of oranges at 6d. a piece.¹⁷³ This was, it seems, the usual price; for on another occasion, Pepys states that, being at the Duke of York's Theatre with his wife and several friends of hers, "it cost me 8s. upon them in oranges, at 6d. a-piece";¹⁷⁴ and, "half-crown my play, sixpence my orange cost" is the cry of the orange-women in the prologue to Mrs. Behn's comedy, "The Young King," of 1698. Of course, money had a much greater purchasing power then than now, and if one considers that Pepys thought £4 a year a high figure for the wages of a cookmaid, 6d. was certainly a lot of money for an orange. But 6d. was the price paid to the orange-women at the playhouse; in the ordinary retail trade the cost was only 3d., as is evident from some bills of debts incurred by Nell Gwynn.¹⁷⁵

For honest women to dress up as orange-girls meant inviting trouble; in Hamilton's "Memoirs of Count Grammont" the story is told of how two pretty maids-of-honour of the Court of Charles II, having disguised themselves as orange-girls in order to visit a famous astrologer, were saved from serious molestation only by abandoning to the London street-mob the contents of their orange baskets.¹⁷⁶ From an orange-girl in the pit of Drury Lane Theatre, Nell Gwynn soon rose to play minor parts as an actress upon the stage, and it was there that she attracted the King's attention. Of her early connection with the fruit trade, the "sweet and gentle" Nell appears to have, even at Court, retained traces in her manner of speech: "I remember," wrote De Foe, the author of "Robinson Crusoe," "that the late Duchess of Portsmouth, in the time of Charles II, gave a severe retort to one who was praising Nell Gwynn (her rival in the King's affections), whom she hated. They were talking of her wit and beauty, and how she always diverted the King with her extraordinary repartees, how she had a fine mien, and appeared as much the lady of quality as anybody. 'Yes, madam,' said the Duchess, 'but anybody may

¹⁷³ LW, VIII, p. 13.

¹⁷⁵ EO, p. 173.

¹⁷⁴ LW, VII, p. 378.

¹⁷⁶ GZ, Vol. II, pp. 85-92.

know she has been an orange-wench by her swearing.'"¹⁷⁷

But in those days, that is in the reign of Charles II, James II, and William and Mary, not only sweet oranges—which could be eaten “au naturel,” in their fresh state—were popular; all citrus fruits then known, that is sweet and sour oranges, citrons, lemons, and shaddocks, were used in the preparation of many dishes, of cosmetics, of perfumery, and of a multitude of other articles in vogue with the wealthy or the snobs. Pickled peel of lemons and oranges entered into the composition of winter salads such as “A Sallet of Lemmon, Caveer, Anchovies, and other of that nature, to corroborate the palate, and cause appetite”;¹⁷⁸ sugared orange-peel, known as “orangado,” was used to give flavour to apple-tarts and other fruit-pies.¹⁷⁹ Orange or lemon jellies¹⁸⁰ and creams, sometimes seasoned with sugar and rosewater,¹⁸¹ as well as syrups and pastes of oranges, citrons, or lemons,¹⁸² were among the most fashionable delicacies of the time. So was a “Dish of Lemon and Chocolate Creams,” a culinary *chef d'oeuvre* by Patrick Lamb, “near 50 years Master-Cook to their late Majesties King Charles II, King James II, King William and Queen Mary, and to Her Present Majesty Queen Anne”; another masterpiece of the same artist was “Pullet or Chicken-Surprize . . . served with sauce of Butter and Gravy, and squeez’d Lemon, and Your Garnishing fry’d Parsley, and cut Orange . . .”¹⁸³ The value, as an appetizer, of a slice of toasted bread soaked in lemon juice, and strewn with powdered sugar, mint, and a little cinnamon, had already been extolled by Sir Thomas Elyot in his book “The Castle of Health” written in 1533;¹⁸⁴ Sir Francis Bacon praises orange-flower water as “A Sovereigne Drink for Melancholy Passions.”¹⁸⁵ The anti-scorbutic properties of the juice of citrus fruits were well known; bottled lemon-juice as a preventive against scurvy was already carried on British ships in the sixteenth century.¹⁸⁶ Orangeade and lemonade became fashionable drinks towards the middle of the seventeenth century. Orangeade was sometimes made of the juice of sour

¹⁷⁷ Quoted by EO, p. 112, footnote 1.

¹⁷⁹ MK, p. 173.

¹⁸⁰ MK, p. 33.

¹⁸² MK, pp. 225, 259, 266.

¹⁸⁴ FM, Book II, p. 27b.

¹⁷⁸ MK, p. 6.

¹⁸¹ MK, p. 44.

¹⁸³ IR, p. 40.

¹⁸⁵ CO, § 18 (p. 5).

¹⁸⁶ IS₂, pp. 149-150.

oranges. On 9th March, 1669, Samuel Pepys, after having paid a visit to his cousin Shadwick, entered the following into his Diary: ". . . here, which I never did before, I drank a glass, of a pint, I believe, at one draught, of the juice of oranges, of whose peel they make confits; and here they drink the juice as wine, with sugar, and it is a very fine drink; but, it being new, I was doubtful whether it might not do me hurt."¹⁸⁷ Of the virtues of lemonade we are told by one of the characters in Shirley's comedy "Captain Underwit" (1641), who sings:

"The Lemonade's sparkling wine

"The grosser witts doth much refine."¹⁸⁸

It was a very popular drink; the "London Gazette" of September 6th, 1709 (No. 4584, Column 4) announces the public sale, "by the Candle in a Cellar under Mr. John Clark's in Savage Garden, between Crutched-fryars and Tower-hill," of eleven barrels of Lemon Juice imported from Italy. "Sales by the Candle" (see Plate CXIII) were the public auctions of the period; the procedure was to thrust a pin through a candle about an inch from the top, and then to let bidding go on until the candle burnt down and the pin dropped into the candlestick, when the last bidder was declared the purchaser. Not only lemon juice, but all fruits as well, including oranges, lemons, and such-like, were being sold, wholesale, in London by this method up to the beginning of the nineteenth century. As to the retail trade and how it was carried on, we gather some information from a dialogue in Etherege's comedy "The Man of Mode," of 1676. The scene is laid in the dressing room of Mr. Dorimant. Enter Foggy Nan, an orange woman.

Dorimant: How now Double Tripe, what news do you bring?

Orange Woman: News! Here's the best fruit has come to town t'year, gad I was up before four a clock this morning, and bought all the choice i' the market.

Dorimant: The nasty refuse of your shop.

Orange Woman: You need not make mouths at it, I assure you 'tis all cull'd ware.

¹⁸⁷ LW, VIII, p. 255.

¹⁸⁸ NP, Act. IV, Scene i.

Dorimant: The citizens buy better on holiday in their walk to Totnam.¹⁸⁹

Perfumes and other cosmetics derived from the essential oils in the peel or blossoms of oranges and lemons were fashionable in England at a very early period. In "Love's Labour's Lost," one of the characters in the play tells us that "the armipotent Mars, of lances the almighty, gave Hector a gift . . . a lemon, stuck with cloves";¹⁹⁰ but already a generation before Shakespeare, Cardinal Wolsey, according to his secretary and biographer George Cavendish, in his daily walk to Parliament used to carry in his hand "a very fair orange, whereof the meat or substance within was taken out, and filled up again with the part of a sponge, wherein was vinegar, and other confections against the pestilent air; the which he most commonly smelt unto, passing among the press, or else when he was pestered with many suitors."¹⁹¹ Samuel Pepys, in his Diary, refers to bottled orange-flower water imported in cases from Lisbon;¹⁹² it entered into the preparation of so-called "Orange-flower cakes"—half a pound of fine sugar, sifted through "an Hair Sieve, then wetted with Orange-Flower-Water and boiled almost to Candy Height"¹⁹³—or "orange-flower bread,"¹⁹⁴ and the dandies of the time used to sprinkle their gloves with it.¹⁹⁵ Shirley, in his play "The Lady of Pleasure" (1635) speaks of "the gallant . . . that carries oringado in his pocket, and sugar-plums to sweeten his discourse,"¹⁹⁶ and in Wytcherley's comedy "Love in a Wood," of 1672, Mr. Dapperwit's lady love "awakens roses on her cheeks with some Spanish wool,

¹⁸⁹ FQ, Act I, Scene i.

¹⁹⁰ NZ, Act V, Scene ii, v. 650.

¹⁹¹ DZ, Vol. I, p. 43. The manufacture of snuff-boxes from orange-peel still goes on in Italy to-day. "At Acireale . . . I saw the hemispherical halves of sour orange rinds being tied with their inner sides out over ends of wooden cylinders and slowly dried in the sun. These are made to take the form of flat halves of disc-like snuff boxes, the inside being the oil-bearing part of the rind and retaining its aromatic sour orange odor, and the outside, when polished and rubbed, giving the appearance of light buckskin. The larger halves as lids are made to just fit over the next smaller ones, making the completed disc-shaped boxes." (Professor Howard S. Fawcett, in AE, 1931, p. 132.)

¹⁹² LW, III, p. 264 (August 1663).

¹⁹³ FJ, p. 68. See also JK, Fable 136 "A Mole and her Dam."

¹⁹⁴ EV, Vol. II, p. 571.

¹⁹⁵ FQ, Act III, Scene ii (p. 43).

¹⁹⁶ In NP, Act I, Scene i.

and sweetens her breath with some lemon peel." ¹⁹⁷ Even snuff was scented with orange-blossom water, ¹⁹⁸ a habit evidently of Italian origin. ¹⁹⁹ Love letters were written with lemon juice instead of ink, because the script became visible only when the paper was held over a fire. ²⁰⁰ "Orangerie" (orange-blossom water) and similar perfumery was mostly imported from France, and whenever warlike operations happened to bring about a shortage of supplies, the snobs of London would feel profoundly unhappy. Eliza Haywood (1693-1756), in "The Female Spectator," says that between London society in time of peace and the same in war time there was no difference to be seen except for bitter complaints made at the interruption of the import of certain desired commodities: "One who can endure no clothes that are not of the French cut, he is made a monster by a dunce of an English taylor; another is poisoned with ill scents, and dies for some orangerie and bergamot." ²⁰¹

Science itself begins to take an interest in citrus fruits: in 1710 a distinguished Fellow of the Royal Society determines the specific gravity and the ratio of refraction of Orange juice. ²⁰²

The "Sale by the Candle bill," of 1776, ²⁰³ reproduced on Plate CXIII, gives us an idea of the wholesale prices which were then being paid in England for citrus fruits: Seville sour oranges fetched from 11s. 6d. to 18s. per chest, China oranges only from 9s. to 12s. 3d., lemons from 17s. 6d. to 19s. Retail prices were probably about twice as high, although on one occasion a London greengrocer was paid as much as five guineas for a few oranges, but then the circumstances of the case were so exceptional that the story is worth being retold here. During the campaign preceding the Westminster election of 1784, an election famous in the annals of the British Parliament, the Duchess of Westminster—Giorgiana, known as the "Duchess of Dimples"—was canvassing for her friend Charles James Fox whose eventual return by a small

¹⁹⁷ QG, Act III, Scene ii (p. 43).

¹⁹⁸ FV, Act II, Scene ii (p. 16). CQ, Act IV (p. 41).

¹⁹⁹ AT, p. 99.

²⁰⁰ EK, "Love for Love," Act IV, Scene xvi (p. 365).

²⁰¹ HC, Vol. I, p. 83.

²⁰² HA, p. 206.

²⁰³ By courtesy of Messrs. White & Son Ltd., of London.

majority was largely due to her wealth and influence. Stopping at a greengrocer's near Mount Street, she bought some oranges, directing that they should be placed in her carriage. She praised the fruit, and slipping five guineas into the hand of the greengrocer whispered significantly that she had paid for them, and hoped he would see his way to giving a plumper for Mr. Fox. "The man paused, stared, examined the cash, and then putting it quietly into his pocket, protested that he was infinitely sorry that he could not oblige her Grace as he had polled for Lord Hood and Sir Cecil Wray an hour earlier."²⁰⁴ The Napoleonic Wars appear to have greatly interfered with the import of citrus fruits into Great Britain. An entry in the manuscript "Book of Orders belonging to the Worshipful Company of Carpenters begun Anno 1793" had ordered that, from 2nd September, 1794 onwards, "one hundred Oranges and Lemons be provided every Court day and distributed among the Court then present"; but another entry, dated 2nd October, 1798, in the "Court Book" of the same Company, "ordered that the dinners of the Court of Assistance and three of the public dinners be discontinued for one year, and that the Court have half a guinea each on Court days instead of five shillings, and that the fruit for the Court be likewise discontinued for a year." After Waterloo, the trade in citrus fruits was resumed and consumption continued to grow; the increase became particularly rapid towards the middle of the last century when the steamship had brought the British Isles so much nearer the producing countries. To-day Great Britain consumes, per head of its population, more oranges than any other citrus importing country throughout the world.

Some readers will probably ask themselves what sort of connection there may exist between the fruit of the orange-tree and expressions like "Orangeism" and "Orange-men," or geographical names such as Orange, Orangeville, Orange City, applied to localities where oranges have probably never been grown. The fact is that the connection is not at all with citrus fruits, but with the name of the House of Orange.

In 1677 the stadhouder William III of Orange, a son of a princess royal of England married to a grandson of

²⁰⁴ QE, Vol. I, pp. 399-400.

William the Silent, had himself married his cousin Mary, the eldest daughter of James, duke of York, afterwards King James II; it was this William III who landed in England in 1688, expelled his father-in-law from the throne, and became joint sovereign of Great Britain and Ireland in conjunction with his wife. After his death in 1702, Irish Protestants who, in memory of King William, called themselves "Orangemen" or "Orangeists," formed themselves into a secret organisation, the "Orange Society," with affiliated local clubs known as "Orange Lodges," the object of which was the maintenance of "Orangeism," that is, of the principle of the Protestant ascendancy which William had established in Ireland. The society was originally started in Ulster—Protestant Ulster is sometimes called "The Orange"—and it is there that it chiefly flourished, but it had numerous ramifications in the United Kingdom, as well as in the British Colonies where it became a popular practice amongst Orangemen to give to newly founded towns or to newly discovered important landmarks names which would proclaim and reaffirm throughout the ages their founders' or their discoverers' loyalty to Orangeism, as the movement itself was styled. This is the reason why we find a locality called *Orange* in each of the states of Massachusetts, South Dakota, Virginia, Vermont, and New Jersey, of the United States of America. The place in New Jersey was originally founded in 1666 under the name Newark Mountains, in 1782 it is found referred to as *Orange Dale*, and two years later as *Orange*; to-day the township of Orange and its offshoots *East Orange*, *South Orange*, and *West Orange* are residential suburbs of the city of Newark. There exist at least eight towns called *Orangeville*, of which one near Toronto in Canada, and one in each of the States of Illinois, Indiana, Michigan, Missouri, Ohio, Pennsylvania, and Utah, in the United States. There is an *Orange City* in the State of Iowa, U.S.A.; the States of Florida, Maine, and New York have each a *Lake Orange*, and New Jersey has a *Mount Orange*. The English naval officers who first surveyed the Chilean coastline around the Strait of Magellan gave the name of *Orange Bay* to a bay belonging to Hoste Island at the southernmost point of the American continent, and, almost at the opposite end of the latter, Newfoundland also has an *Orange Bay*.

The surname of "Orange Peel" has been applied by political opponents to Sir Robert Peel, in allusion to his strong anti-Catholic prejudice displayed when Chief Secretary for Ireland (1812-1818). A popular song of the time ran as follows:

Orange Peel.

A New Song to an Old Tune.

Our Wigs and our Tories now 'gree unco weel,
O'Connell himsel' now lies down wi' Bob Peel;
.

A little bit Orange Peel now is the thing,
It makes a fine mess for a *Rat* or a King,
And duly mixed up with sweet milk or courass,
Is mighty fine gear for old wives—or an ass.

Then thanks loud and long to the great Doctor Peel,
Whose measures emetic are shortly to heal
The Scurvy and Scabs of the "Emerald Isle,"
And sweeten the breath of sweet Doctor o'Doyle!

. Waken Britons! Arise!
United, send forth your loud voice to the skies!
Let Orange Peel reptiles and rats take their swing,
But the people be true to the Laws and the King!

CHAPTER X.

PRESENT-DAY PRODUCTION AND CONSUMPTION.

THE story unfolded in the preceding chapters has shown us how, in those countries where citrus fruits were not grown, oranges and lemons, from a rare and costly luxury which only crowned heads or princes of the Church could permit themselves, had, by the seventeenth and eighteenth centuries, become plentiful and cheap enough to place them within the reach of the aristocracy and the rich bourgeoisie. It was only during the second half of the nineteenth century that they became available to the lower middle classes, and not until the end of the nineteenth and the beginning of the twentieth century did they become a fruit of the common people. The factors which brought about this development were, first the application of steam power to transport by land and sea, and subsequently, the invention of artificial refrigeration and its adaptation to the railway truck and the steamship.

As long as the transport of goods could be effected only by pack animals, by animal-drawn vehicles and river barges, or by sailing ships, the slowness of progress and consequent length of the journey from the centres of production to those of consumption resulted in the loss, through decay, of so high a percentage of the transported fruit that the merchants, if they were to make a profit at all, were forced to demand almost prohibitive prices for those oranges and lemons which managed to arrive at their destination in a sound condition. In consequence, the demand for these expensive fruits remained limited, so that little incentive was offered to the growers in the countries of production to increase their output by planting more land with orange or lemon trees. But, shortly after the middle of the last century, Europe began to be rapidly covered with a network of railways, whilst, on sea, the invention of the compound engine brought about so great an economy in fuel that the steamship, previously used only for the conveyance of mails and passengers, was

enabled to compete with the sailing vessel in the carriage of cargo on long voyages. In America, the year 1869 saw the completion of the first transcontinental railway line from the Atlantic to the Pacific coasts of the United States. Thanks to the enormous saving in time effected by these new methods of transport, tremendous new possibilities were opened for the conveyance of citrus fruit, without excessive losses through waste, from the centres of production to those of consumption, in Europe as well as in North America. On the other hand, in 1863, the "City of Rio de Janeiro," with refrigerating machinery installed by the French physicist Tellier, made the first experimental voyage from France to Uruguay, and in 1880, the "Strathleven" carried the first cargo of frozen meat from Australia to London, thus demonstrating the commercial value of a method of transport which was to enable the sparsely populated but fertile countries of the southern hemisphere to enter the field as suppliers of an important part of the foodstuffs which the rapidly increasing millions of industrialized Europe were finding it more and more impossible to win from the soil of their own continent.

One of the effects of these developments in the technique of transport was to provide a powerful stimulus to the culture of citrus fruits in Spain and Italy, in California and Florida, in Palestine and in South Africa. In the absence of statistics referring to those early times, it may be estimated that towards the middle of the nineteenth century, the total commercial production of oranges throughout the world cannot have exceeded a few million, and that of lemons a few hundred thousand, cases; grapefruit was not cultivated at all for commercial ends. To-day, the principal citrus-growing countries of the world produce annually some 190,000,000 boxes of oranges and mandarines, about 30,000,000 boxes of grapefruit, and some 20,000,000 boxes of lemons; total exports from the countries of production to the non-citrus-growing countries of consumption amount to about 50,000,000 boxes of oranges, 3,000,000 boxes of grapefruit, and 9,000,000 boxes of lemons. Table I, on page 316, shows the number of citrus trees in existence in the principal producing countries; their aggregate number in all the countries mentioned exceeds 220,000,000. Table II, on page 317,

shows the present annual crop of citrus fruit in the principal producing countries of the world, and Table III, the quantity annually shipped from the principal exporting countries. Of the total world output of 5,800,000 tons (190,000,000 boxes) of oranges and mandarines, 1,300,000 tons (43,000,000 boxes) or about 22 per cent. are grown in the southern hemisphere, whilst the latter contributes 6,000,000 boxes, or about 12 per cent., to the total of 50,000,000 boxes representing the aggregate exports of oranges and mandarines from all producing countries throughout the world.

Table IV shows how the bulk of the world-exports of citrus fruits is distributed amongst the principal importing countries, and Table V, how the quantities imported by each country work out when expressed in pounds or kilograms of oranges and mandarines, of grapefruit, and of lemons, consumed each year per head of their respective populations. It will be seen that the average Englishman, with his consumption figure of 24 lb. per head per year, eats about one and a half times as many pounds of oranges and mandarines as the average Frenchman or German, about four times as many as the average Dane, and about twelve times as many as the average citizen of Poland, Czechoslovakia or Yugoslavia; whilst the average consumption per head of population of the sixteen European countries listed in the table amounts to only 13.9 lb. If throughout all of these countries the consumption of oranges and mandarines could be increased so as to equal the figure for the United Kingdom, then the additional requirements—about 40,000,000 boxes—of these sixteen countries would more than suffice to absorb the maximum increase which may be expected in the total world crop once all the young orange and mandarine trees in existence, but not yet producing fruit, in North and South America, in Spain and Italy, in Palestine and in Northern and Southern Africa, will have reached the full bearing stage. What if Russia in Europe should ever become again a fruit-consuming country, and if its 100 million inhabitants, instead of importing as at present a mere 60,000 cases, should require, even at an average rate of only 10 lb. per head, a quantity of about 15,000,000 cases? The question is, whether and in what measure the average consumption per head throughout Europe is still capable of being increased.

If, in recent years, the average *per capita* imports of oranges and mandarines in the principal importing countries has slightly decreased, this is due entirely to the manifold restrictions—import quotas, foreign exchange control, prohibitive duties—applied to imports of fruit in a number of countries, owing to financial difficulties due to the severe economic depression prevailing throughout Europe. There can be little doubt that, as soon as conditions improve, the restrictions which now artificially hamper international trade will be relaxed if not altogether removed, and then the *per capita* consumption of oranges all over Europe will very probably undergo an immediate and substantial increase. The same remark applies, and with even more force, to grapefruit, which is as yet hardly known on the European continent.

As far as one can foresee, by 1942 the annual citrus crop of the world will amount to something like 220 million cases of oranges and mandarines, 40 million cases of grapefruit, and 22 to 25 million cases of lemons; enough to fill about a million railway trucks or two million motor lorries. And if all the human race were enabled to share equally in the enjoyment of the golden fruit, there would be available, each year, nineteen oranges or mandarines, three lemons, and two grapefruit to every human being under the sun.

TABLE I.¹ NUMBER OF CITRUS TREES IN THE PRINCIPAL PRODUCING COUNTRIES (THOUSANDS).

Country		Oranges and mandarines	Lemons	Grapefruit
British Empire				
Australia, 1934-35	...	4,037	526	(c) 68
British West Indies, 1936	... (a)	1,500	—	—
Cyprus, 1936	... (a)	300	—	—
New Zealand, 1936	...	46	96	—
Palestine, 1937	... (a)	6,800	—	—
South Africa, 1936	...	4,420	158	292
Southern Rhodesia, 1930	...	170	—	—
Foreign				
Albania, 1935	... ..	93	31	(c) 6
Algeria, 1936-37	... ..	2,400	—	—
Argentina, 1932-33	... ..	2,500	176	105

¹ Reproduced from QM, p. 27.

Country	Oranges and mandarines	Lemons	Grapefruit
<i>Foreign—continued</i>			
Brazil, 1934 ...	18,000	—	—
Chile, 1929-30 ... (d)	202	(b,d) 112	—
Egypt, 1935 ...	7,554	(b) 1,050	—
France, 1929 ...	95	63	—
French Morocco, 1935 ... (a)	941	—	—
Greece, 1935 ... (d)	220	—	—
Italy, 1936 ...	18,900	11,200	(c) 1,200
Japan, 1935 ...	32,454	—	—
Mexico, 1935 ...	1,841	(b) 1,000	27
Paraguay, 1931-32 ...	700	—	—
Peru, 1929 ... (a)	845	—	—
Philippine Islands, 1935 ...	970	—	339
Porto Rico, 1937 ...	3,000	—	300
Soviet Union, 1937 ... (a)	1,500	—	—
Spain, 1935-36 ...	30,000	815	5
Syria and Lebanon, 1936 ... (a)	906	—	—
Tunis, 1935 ... (d)	200	(d) 65	—
Turkey, 1937 ...	442	136	—
United States, 1934-35 ...	40,291	(b) 4,971	14,903
Uruguay, 1929-30 ...	2,100	—	—

(a) All citrus.

(b) Includes limes.

(c) Other citrus.

(d) In bearing only.

TABLE II.¹ PRODUCTION OF CITRUS FRUITS IN THE PRINCIPAL PRODUCING COUNTRIES (TONS).

Fruit and Country	1930	1936
<i>Oranges and mandarines</i>		
Australia ...	77,000	(b)
Palestine (c) ...	112,000	250,000
South Africa (c) ...	72,000	100,000
Algeria ...	52,000	88,000
Brazil (d) ...	650,000	1,090,000
Egypt ... (b)	...	122,000
Greece ...	12,000	(b)
Italy ...	337,000	412,000
Japan ...	365,000	460,000
Mexico ...	123,000	(b)
Spain ...	1,177,000	1,350,000
Syria and Lebanon (a) ...	39,000	45,000
United States ...	1,841,000	1,870,000

¹ Reproduced from QM, p. 29.

Fruit and Country				1930	1936
Lemons					
Australia	...	...	...	10,000	(b)
Italy	...	...	...	480,000	278,000
Japan	...	...	...	20,000	(b)
Mexico	...	...	...	18,000	(b)
Spain	...	...	...	58,000	(b)
United States	...	...	...	262,000	275,000
Grapefruit					
Jamaica (c)	...	...	...	6,000	6,000
Palestine (c)	...	...	...	3,000	25,000
South Africa (c)	...	...	...	6,000	13,000
Cuba (c)	...	...	...	13,000	10,000
Philippine Islands	...	...	...	7,000	(b)
Porto Rico (c)	...	...	...	27,000	(b)
United States	...	...	...	588,000	1,027,000
Limes					
Dominica	...	...	...	8,000	2,000
St. Lucia	...	...	...	3,000	2,000
Mexico	...	...	...	14,000	(b)

(a) Includes lemons.

(b) Not available.

(c) Estimated from exports.

(d) All citrus.

TABLE III.¹ EXPORTS OF CITRUS FRUIT FROM THE PRINCIPAL EXPORTING COUNTRIES (TONS).

Fruit and Country				1930	1936
Oranges and mandarines					
Australia (c)	...	...	...	5,000	9,000
Cyprus (f)	...	...	...	4,000	12,000
Jamaica	...	...	...	1,000	9,000
Palestine	...	...	...	98,000	186,000
South Africa	...	...	...	56,000	72,000
Southern Rhodesia (c)	...	...	...	6,000	3,000
Algeria (a)	...	...	...	6,000	23,000
Algeria (b)	...	...	...	15,000	34,000
Brazil	...	...	...	29,000	105,000
China	...	...	...	11,000	19,000
Egypt	...	...	...	(c)	5,000
Italy	...	...	...	130,000	85,000
Japan	...	...	...	13,000	36,000
Japan (f, g)	...	...	...	10,000	(d)

¹ Reproduced from QM, p. 30.

Fruit and Country				1930	1936
Oranges and mandarines— <i>continued</i>					
Paraguay	...	...	...	5,000	1,000
Spain	...	...	...	1,069,000	(d)
Syria and Lebanon	...	...	...	4,000	6,000
United States	...	...	...	75,000	142,000
Grapefruit					
Jamaica	...	...	...	5,000	5,000
Palestine	...	...	...	1,000	25,000
South Africa	...	...	...	3,000	9,000
Trinidad (c)	...	...	...	(e)	2,000
Cuba	...	...	...	11,000	8,000
Porto Rico	...	...	...	17,000	(d)
United States	...	...	...	28,000	31,000
Lemons					
Italy	...	...	...	265,000	177,000
Spain	...	...	...	23,000	(d)
Syria and Lebanon	...	...	...	10,000	8,000
United States	...	...	...	7,000	21,000

- (a) Oranges only.
 (b) Mandarines only.
 (c) All citrus fruit.
 (d) Not available.
 (e) Below 500 tons.
 (f) Includes lemons.
 (g) Trade with Korea.

TABLE IV.¹ IMPORTS OF CITRUS FRUIT INTO THE PRINCIPAL IMPORTING COUNTRIES (TONS).

Fruit and Country				1930	1936
Oranges and mandarines					
United Kingdom	...	...	...	510,000	477,000
Canada	...	...	...	80,000	41,000
Irish Free State	...	...	...	11,000	13,000
New Zealand	...	...	(a)	5,000	(d)
Argentina	...	...	...	(d)	13,000
Austria	...	...	...	27,000	18,000
Belgium (b)	...	...	...	71,000	78,000
China	...	...	...	11,000	2,000
Czechoslovakia	...	...	...	27,000	25,000

¹ Reproduced from QM, p. 34.

Fruit and Country		1930	1936
Oranges and mandarines— <i>continued</i>			
Denmark	... (a)	11,000	9,000
Finland	...	4,000	7,000
France	...	204,000	281,000
Germany	...	346,000	263,000
Hungary	...	14,000	14,000
Korea (f)	...	10,000	(d)
Netherlands	...	90,000	80,000
Norway (b)	...	19,000	21,000
Poland	...	5,000	26,000
Roumania	...	7,000	6,000
Sweden	...	26,000	34,000
Switzerland	...	23,000	28,000
Yugoslavia	...	9,000	7,000

Lemons

United Kingdom	...	74,000	50,000
Canada	...	12,000	12,000
Argentina	...	3,000	1,000
Austria	...	11,000	8,000
Czechoslovakia	...	16,000	14,000
Denmark	...	2,000	2,000
France	...	20,000	28,000
Germany	...	71,000	73,000
Greece	...	9,000	(d)
Hungary	...	7,000	5,000
Netherlands	...	8,000	5,000
Poland	...	12,000	8,000
Roumania	...	7,000	4,000
Sweden	...	2,000	2,000
Switzerland	...	7,000	10,000
Turkey	...	4,000	3,000
United States	...	35,000	2,000
Yugoslavia	...	6,000	4,000

Grapefruit (c)

United Kingdom	...	28,000	57,000
Canada	...	11,000	19,000
United States	...	5,000	4,000

(a) Includes grapefruit.

(b) All citrus fruit.

(c) Imports into Germany, France and other European countries not separately shown.

(d) Not available.

(f) Trade with Japan ; includes lemons.

TABLE V.¹ IMPORTS OF CITRUS FRUIT INTO THE PRINCIPAL IMPORTING COUNTRIES PER HEAD OF POPULATION.

Fruit and Country		Population	1930		1936	
			lb.	kg.	lb.	kg.
Oranges and mandarines						
United Kingdom		43,000,000	25.96	11.8	24.2	11.0
Canada ...	...	19,000,000	9.24	4.2	4.62	2.1
Irish Free State		3,000,000	7.92	3.6	9.46	4.3
New Zealand ...	...	1,500,000	4.62	2.1	—	—
Argentina ...	...	12,400,000	—	—	2.2	1.0
Austria ...	...	6,600,000	8.8	4.0	5.94	2.7
Belgium ...	...	8,000,000	19.36	8.8	21.34	9.7
China ...	...	422,700,000	0.044	0.02	0.011	0.005
Czechoslovakia ...	...	14,000,000	4.18	1.9	2.2	1.0
Denmark ...	...	3,300,000	7.26	3.3	5.94	2.7
Finland ...	...	3,500,000	2.42	1.1	4.4	2.0
France ...	...	39,000,000	11.44	5.2	15.84	7.2
Germany ...	...	60,000,000	18.92	8.6	14.74	6.7
Hungary ...	...	8,000,000	3.74	1.7	3.74	1.7
Korea ...	...	22,800,000	0.88	0.4	—	—
Netherlands ...	...	7,000,000	28.16	12.8	25.08	11.4
Norway ...	...	2,600,000	16.06	7.3	17.6	8.0
Poland ...	...	27,000,000	0.22	0.1	1.98	0.9
Roumania ...	...	17,000,000	0.88	0.4	0.66	0.3
Sweden ...	...	6,000,000	9.46	4.3	12.76	5.8
Switzerland ...	...	4,000,000	12.54	5.7	15.4	7.0
Yugoslavia ...	...	12,000,000	1.54	0.7	1.10	0.5
		742,400,000	4.4	2.0	4.18	1.9
Grapefruit						
United Kingdom		43,000,000	1.32	0.6	2.86	1.3
Canada ...	...	19,000,000	1.32	0.6	2.2	1.0
United States ...	...	123,000,000	0.088	0.04	0.066	0.03
		185,000,000	0.44	0.2	0.88	0.4
Lemons						
United Kingdom		43,000,000	3.74	1.7	2.42	1.1
Canada ...	...	19,000,000	1.32	0.6	1.32	0.6
Argentina ...	...	12,400,000	0.44	0.2	0.17	0.08
Austria ...	...	6,600,000	3.52	1.6	2.64	1.2
Czechoslovakia ...	...	14,000,000	2.42	1.1	2.2	1.0
Denmark ...	...	3,300,000	1.10	0.5	1.10	0.5
France ...	...	39,000,000	1.10	0.5	1.54	0.7
Germany ...	...	60,000,000	2.42	1.1	2.64	1.2
Greece ...	...	6,200,000	3.08	1.4	—	—
Hungary ...	...	8,000,000	1.76	0.8	1.32	0.6

¹ Prepared by the author on the basis of the import figures in Table IV.

Fruit and County	Population	1930		1936	
		lb.	kg.	lb.	kg.
Lemons— <i>continued</i>					
Netherlands ...	7,000,000	2.42	1.1	1.54	0.7
Poland ...	27,000,000	9.68	4.4	0.66	0.3
Roumania ...	17,000,000	0.88	0.4	0.44	0.2
Sweden ...	6,000,000	0.66	0.3	0.66	0.3
Switzerland ...	4,000,000	3.74	1.7	5.50	2.5
Turkey ...	16,200,000	0.44	0.2	0.22	0.1
United States ...	123,000,000	0.44	0.2	0.022	0.01
Yugoslavia ...	12,000,000	1.10	0.5	0.66	0.3
	423,700,000	1.54	0.7	0.11	0.05

CONCLUSION.

It is in the southern and eastern regions of the Asiatic continent and in the Malayan Archipelago that one must look for the original home of the genus *Citrus*: the orange and the citron are certainly of Chinese origin, the lemon is either Chinese or Indian, whilst the lime, the shaddock, and the grapefruit probably hail from the Archipelago.

Of all citrus species, the citron was the first to reach the Mediterranean world, during the century following Alexander the Great's conquest of Western Asia ; its culture spread rapidly throughout the Levant, northern Africa, Greece, and Italy, chiefly owing to its inclusion into Jewish ritual towards the middle of the second century B.C. The orange and the lemon made their first appearance in Mediterranean countries as soon as the Romans had discovered the direct sea-route from the Red Sea to India. The circumnavigation of Africa by the Portuguese under Vasco da Gama led to the acclimatization in Europe of improved varieties of sweet oranges—"Portugal" and "China" oranges—whilst the Spaniards under Christopher Columbus planted the first oranges, lemons, citrons, and shaddocks on American soil.

In the early centuries following upon their acclimatization in southern Europe, citrus fruits appear to have been used almost exclusively in ritual and in medicine. During the late Middle Ages, they acquired considerable importance as seasoning for meat or fish ; but, being still scarce and costly, their use remained restricted to the households of the princes and the rich. To the broader masses of the people they did not become available until the latter half of the nineteenth century, when railways, steamships, and motor vessels had so shortened the duration of transport that citrus fruits from all producing countries of the northern hemisphere could be delivered, in good condition and at a low cost, to all important centres of population in Europe or in the United States of America. With the application of cold storage to maritime transport, the

southern hemisphere entered the field as supplier of citrus fruits, and thus Europe is now enabled to enjoy oranges, mandarines, and grapefruit all the year round.

The extraordinary expansion of the citrus industries of all five continents has been accompanied by the development of new and better varieties such as the Washington Navel and Jaffa oranges, and the Marsh grapefruit. It is not one of the least interesting consequences of the improvements effected in the production and transport of citrus fruits, that the superior varieties just mentioned are in an increasing measure being supplied to the markets of those selfsame Eastern Asiatic and Indian countries whence their earliest ancestor-trees first set out on their journey of conquest around the globe.

BOOKS AND ARTICLES QUOTED.

(1) CITRUS LITERATURE.

- AA A. Aaronsohn, *La Production Mondiale des Agrumes*. Jaffa, 1914.
- AB A. Aloï, *Gli Agrumi*. Milan, 1900.
- AC [Ballon], *Nouveau Traité des Orangers et Citronniers*. Paris, 1692.
- AD E. Bonavia, *The Cultivated Oranges and Lemons etc. of India and Ceylon*, 2 vol. (Vol. I: Text, Vol. II: Atlas). London, 1888.
- AE *The California Citrograph*. A Monthly Publication devoted to the Interests of the Citrus Industry, Los Angeles.
- AF Gio. Domenico Civinini, *Della Storia degli Agrumi. Lezione academica*. Florence, 1734.
- AG J. Eliot Coit, *Citrus Fruits*. New York, 1925.
- AH J. Commelyn, *Nederlantze Hesperides Dat is, Oeffening en Gebruik van de Limoen en Oranje-Boomen Gestelt na den Aardt, en Climaat der Nederlanden*. Amsterdam, 1676.
- AI R. A. Davis, *Citrus Growing in South Africa*. Cape Town, 1924.
- AJ Io. Baptistae Ferrarii (Senensis) *Hesperides sive De Malorum Aurorum Cultura et Uso Libri Quatuor*. Rome, 1646.
- AK Rafael Font de Mora, *El Naranjo, su Cultivo y Explotacion*. Madrid, 1922.
- AL Georges Galesio, *Traité du Citrus*. Paris, 1811.
- AM Edmund Goetze, *Ein Beitrag zur Kenntnis der Orangengewächse*. Hamburg, 1874.
- AN Hermann Grube (Lubecensis), *Analysis Mali Citrei compendiosa Ad Botanices, Philosophicae juxta ac Medicae, Cynosorum redacta*. Lübeck, 1668.
- AO Han Yen-Chi's *Chü Lu* (Monograph on the Oranges of Wen-Chou, Chekiang), Translated by Michael J. Hagerty with Introduction by Paul Pelliot. Reprinted from the *T'oung Pao*, 2nd Series, Vol. XXII. Leide, 1923.
- AP H. Harold Hume, *Citrus Fruits and their Culture*. New York, 1915.

- AQ H. Harold Hume, *The Cultivation of Citrus Fruits*. New York, 1926.
- AR [Ibn Jamīya]: *De Limonibus Tractatus Embitar Arabis per Andream Bellunensem latinitate donatus*. Paris, 1602.
- AS [Ibn Jamīya]: *In Ebenbiter Tractatum de Malis Limoniis Commentaria Pauli Valcarengi*. Cremona, 1758.
- AT Giuseppe Lanzoni, *Citrologia sev'Curiosa Citri Descriptio*. Ferrara, 1690.
- AU Victor Loret, *Le Cédratier dans l'Antiquité*. Reprint from the *Annales de la Société Botanique de Lyon*. Lyon, 1890.
- AV Etienne Michel. *Traité du Citronnier*. Paris, 1816.
- AW Nicolai Monardes, *De Aurantii*. Antwerp, 1551.
- AX P. Morin, *Instruction facile pour connaître toutes Sortes d'Orangers et Citronniers, qui enseigne aussi la manière de les cultiver, semer, planter, greffer, transplanter, . . . avec un Traité sur la Taille des Arbres*. Paris, 1680.
- AY *Dissertatio Medica inauguralis qua Malum Citreum, . . . submittit Daniel Nebel . . .*, Heidelberg, 1686.
- AZ J. D. Oppenheim, *A Preliminary Note on the Origin of the "Jaffa Orange."* In *Genetica*, IX, pp. 516-520. The Hague, 1927.
- BA Ioannis Ioviani Pontani *De hortis hesperidum, sive de cultu citriorum, . . . Libri duo*. Florence, 1514.
- BB H. Clark Powell, *The Culture of the Orange and Allied Fruits*. South Africa (Pretoria ?), 1930.
- BC M. de la Quintinye, *Instruction pour les Jardins Fruitiers et Potagers, avec un Traité des Orangers, suivy de quelques Reflexions sur l'Agriculture*. Amsterdam, 1692.
- BD (The same translated by John Evelyn): *The Compleat Gard'n'er; or, Directions for Cultivating and Right Ordering of Fruit Gardens and Kitchen Gardens. With divers reflections on several parts of Husbandry. By the famous Monsr. De La Quintinye, Chief Director of all the Gardens of the French King, To which is added His Treatise of Orange-Trees. . .* London, 1693.
- BE A. Risso et A. Poiteau, *Histoire Naturelle des Orangers*. Paris, 1818.
- BF José Rullan, *Cultivo del Naranja en las Baleares*. Soller, 1896.

- BG Franciscus van Sterbeeck, *Citricultura oft Regeringhe der wythemsche Boomen te weten Oranien, Citroenen, Limoenen, Granaten, Laurieren en Andere*. . . . Antwerp, 1682.
- BH Tyôzaburô Tanaka, *A Monograph of the Satsuma Orange, with Special Reference to the Occurrence of New Varieties through Bud Variations*. Published by the Taihoku Imperial University, Formosa (Japan), 1932.
- BI Johann Christoph Volkamer, *Nürnbergische Hesperides, oder Gründliche Beschreibung der Edlen Citronat, Citronen und Pomerantzen - Früchte*. Nürnberg, 1708.
- BJ *Id.*, *Continuation der Nürnbergischen Hesperidum, oder Fernere gründliche Beschreibung der Edlen Citronat, Citronen, und Pomerantzen-Früchte*. Nürnberg, 1714.

(2) GENERAL.

- BK *Relation de l'Egypte* par Abd-Allatif. Trad. par M. Silvestre de Sacy. Paris, 1810.
- BL Israel Abrahams. *Jewish Life in the Middle Ages*. London, 1896.
- BM *Accounts of the Lord High Treasurer for Scotland*. Edited by Thomas Dickson, Curator of the Historical Department of the General Register House. Edinburgh, 1877.
- BN P. Joseph de Acosta, *Historia Natural y Moral de las Indias*. Sevilla, 1590.
- BO *Ystoire de li Normant* par Aimé, Evêque et Moine au Mont Cassin. Publiée avec une Introduction et des Notes par l'Abbé O. Delarc. Rouen, 1892.
- BP Joseph Aladern, *Diccionari Popular de la Llengua Catalana*. Barcelona, 1906.
- BQ Luigi Alamanni, *La Coltivazione*. Milan, 1804.
- BR Leandro Alberti, *Descrittione di tutta Italia*. Venice, 1551.
- BS *Id.*, *Isole Appartenenti alla Italia*. Venice, 1567.
- BT Alberti Magni *ex Ordine Praedicatorum De Vegetabilibus Libri VII, Historiae Naturalis Pars XVIII*. Editionem criticam ab Ernesto Meyero Coeptam absolvit Carolus Jessen. Berlin, 1867.
- BU W. Herbert Allen, *Italian Wall Decorations of the 15th and 16th Centuries*. A handbook to the Models, illustrating Interiors of Italian Buildings, in the Victoria and Albert Museum, South Kensington. London, 1911.

- BV *Tratado Breve dos Rios de Guiné do Cabo-Verde . . . pelo Capitão André Alvares d'Almada, Natural da Ilha de Santiago de Cabo-Verde, pratico e versado nas ditas partes. Publicado por Diogo Köpke. . . .* Porto, 1841.
- BW Fortunato de Almeida, *Historia de Portugal*, Vol. III. Coimbra, 1925.
- BX Michele Amari, *Storia dei Musulmani di Sicilia*. 3 vol. Florence, 1854-1868.
- BY Michele Amari, *Biblioteca Arabo-Sicula*. Leipzig, 1857.
- BZ E. Amélineau, *Voyage d'un Moine égyptien dans le Désert* (in *Recueil de Travaux relatifs à la Philologie et à l'Archéologie égyptiennes et assyriennes*, Vol. XI, 1885).
- CA The Hon. Mrs. Evelyn Cecil (The Hon. Alicia Amherst), *A History of Gardening in England*. 3rd enlarged Edition. London, 1910.
- CB Paolo d'Ancona, *La Miniature Italienne du X^e au XVI^e Siècle*. Traduction de M. P. Poirier. Paris and Brussels, 1925.
- CC Anonymous Pilgrim (in *Palestine Pilgrims Texts Society*, Vol. VI). London, 1894.
- CD Apicius Caelius: *Apicii Librorum X qui dicuntur de re coquinaria*, ed. C. Giarratano et Fr. Vollmer. Leipzig, 1922.
- CE Apollodorus, *The Library*. With an English Translation by Sir James George Frazer. 2 vol. London, 1921.
- CF Apuleius, *The Golden Ass*. With an English Translation by W. Adlington (1566). Revised by S. Gaselee. London, 1924.
- CG *Archives de l'Orient Latin*. Publiés sous le Patronage de la Société de l'Orient Latin. Vol. II. Paris, 1884.
- CH *Les Dialogues du divin Pietro Aretino*. 1^e partie. Paris, 1879.
- CI *Orlando Furioso di Ludovico Ariosto da Ferrara*. Ferrara, 1516.
- CJ *De l'Art Culinaire et des Repas chez les Peuples Modernes*. Paris, 1855.
- CK Athenaeus, *The Deipnosophists or The Banquet of the Learned*. Literally translated by C. D. Yonge. 3 vol. London, 1854.
- CL *The Natural History and Antiquities of the County of Surrey begun in the year 1673, by John Aubrey, Esq., F.R.S., and continued to the present time (1691 ?)*. 5 vol. London, 1718.

- CM Avicenna, *Canon* קַנּוֹן In Hebrew. Napoli, 1491.
- CN *Memoirs of Zehîr-ed-Dîn Muhammed Bâbur, Emperor of Hindustan, written by himself, in the Chaghatai Turki and translated by John Leyden, Esq., M.D., and William Erskine, Esq.* Annotated and Revised by Sir Lucas King. 2 vol. Oxford University Press, 1921.
- CO Francis Bacon, *Sylva Sylvarum, or A Natural History in ten Centuries.* London, 1627.
- CP L. H. Bailey, *Standard Encyclopedia of American Horticulture.*
- CQ Thomas Baker, *Tunbridge-Walks, or, The Yeomen of Kent, A Comedy.* London, 1703.
- CR *Le Quattro Parti delle Novelle del Bandello. Riprodotte sulle antiche Stampe di Lucca (1554) e di Lione (1573) a cura di Gustavo Balsamo-Crivelli.* Turin, 1910.
- CS *The Book of Duarte Barbosa: An account of the countries bordering on the Indian Ocean and their inhabitants, written by Duarte Barbosa and completed about the year A.D. 1518.* Translated from the Portuguese text, first published in A.D. 1812 by the Royal Academy of Sciences at Lisbon. Edited and annotated by Mansel Longworth Dames. London, 1918.
- CT *Opere del Cardinale Bembo, with La Vita di M. Pietro Bembo Cardinale at the beginning of Vol. I.* Milan, 1808.
- CU Francois Benoit, *L'Architecture. L'Orient Médiéval et Moderne.* Paris, 1912.
- CV A. Berliner, *Geschichte der Juden in Rom.* Francfort a/M, 1893.
- CW Emile Berteaux, *Rome, de l'Ere des Catacombes à l'Avènement de Jules II.* 3^e éd. Paris, 1916.
- CX Louis Bertrand, *Sainte Thérèse.* Paris, 1927.
- CY G. Bluwstein, *Storia degli Ebrei in Roma del II^o Secolo avanti Cristo.* Roma, 1921.
- CZ Boccaccio, *The Decameron.* London, 1924.
- DA E. Bonavia, *The Flora of the Assyrian Monuments and its Outcomes.* London, 1894.
- DB Nicolas de Bonnefons, *Les Délices de la Campagne.* Paris, 1662.
- DC *Folk Songs of Many Peoples.* Compiled and edited by Florence Hudson Botsford. New York, 1922.
- DD René Bouvier, *Un Financier Colonial au XV^e Siècle: Jean Coeur.* Paris, 1928.
- DE Dietrich Brandis, *Indian Trees.* London, 1906.

- DF *Oeuvres Complètes de Pierre de Bourdeille, seigneur de Brantôme, publiées par Ludovic Lalanne, pour la Société de l'Histoire de France.* 11 vol. Paris, 1864-1882.
- DG E. Bretschneider, *On the Study and Value of Chinese Botanical Works, with Notes on the History of Plants and Geographical Botany from Chinese Sources.* Foochow, 1870.
- DH Id., *Botanicon Sinicum. Notes on Chinese Botany from Native and Western Sources.* Part II. London, 1882.
- DI *The Travels of Bertrandon de la Brocquière (A.D. 1432, 1433).* In "Early Travels in Palestine" edited, with notes, by Thomas Wright. London, 1848.
- DJ [Bruyerin - Champier]: *Io. Bruyerino Campegio Lugdun, autore De Re Cibaria Libri XXII omnium ciborum genera, omnium gentium moribus, & usu probata complextentes.* Lyon, 1560.
- DK *Reizen van Cornelis de Bruyn door de vermaardste Deelen van Klein Asia, De Eylanden Scio . . . Aegypten, Syrien en Palestina.* Delft, 1698.
- DL Burchard of Mount Zion, *A Description of the Holy Land.* Palestine Pilgrims' Texts Society, London, 1896.
- DM Richard F. Burton, *Personal Narrative of a Pilgrimage to El-Medinah and Meccah.* 3 vol. London, 1856.
- DN Richard F. Burton, *The book of Thousand Nights and a Night.* Printed by the Burton Club. London.
- DO Johannis Buxtorfi, *Synagoga Judaica: Das ist Juden-schül.* Basel, 1643.
- DP Mildred Stapley Byne and Arthur Byne, *Spanish Gardens and Patios.* Philadelphia and London, 1924.
- DQ *Les Monuments Historiques de la Tunisie.* 1^e partie: *Les Monuments Antiques.* Publiés par René Cagnat & Paul Gauckler. Paris, 1898.
- DR *The Cambridge Ancient History.* Edited by J. A. Bury, S. A. Cook, F. E. Adcock. Cambridge, 1924, etc.
- DS *Additions to Camden's Britannia.* London, 1695.
- DT Luiz de Camões, *Os Luisadas.*
- DU A. de Candolle, *Géographie Botanique Raisonnée.* Paris and Geneva, 1854.
- DV Id., *L'Origine des Plantes Cultivées.* 5^e éd. Paris, 1912.

- DW *Records of the Worshipful Company of Carpenters.* Transcribed and edited by Bower Marsh. 4 vol. Oxford, 1914-1916.
- DX [F. Lopez de Castanheda]: *Historia del descubrimiento y conquista de la India por los Portugueses, compuesta por Hernan Lopez de Castañeda en lenguaje Portugues, y traduzida nuevamente en Romance Castellano.* Antwerp, 1554.
- DY *De Koninglycke Hovenier aanwyzende De Middelen om Boomen, Bloemen en Kruiden, te Zaayen, planten, aen queeken en voort teelen. Met konstige koperen Platen verciert.* Door D. H. Cause. Amsterdam [1676 ?].
- DZ *The Life of Cardinal Wolsey*, by George Cavendish, his gentleman usher. 2 vol. London, 1825.
- EA Jacques Androuet du Cerceau, *Les plus excellents Bâtimens de France.* 2 vol. Paris, 1576-1579.
- EB Basil Hall Chamberlain, *The Classical Poetry of the Japanese.* London, 1888.
- EC *Lettres de Charles VIII Roi de France. Publiées d'après les Originaux pour la Société de l'Histoire de France par P. Pélicier.* 5 vol. Paris, 1898-1905.
- ED M. P. Charlesworth, *Trade-Routes and Commerce of the Roman Empire.* Cambridge, 1924.
- EE Ahmed Chérif, *Histoire de la Médecine Arabe en Tunisie.* Tunis, 1908.
- EF Casimir Chledowski, *Siena.* 2 vol. Berlin, 1923.
- EG *Narrative of the Embassy of Ruy Gonzalez de Clavijo to the Court of Timour at Samarcand, A.D. 1403-6.* Translated for the first time with notes, a preface and an introductory life of Timour Bey by Clements R. Markham. London, 1859.
- EH *Comptes de l'Argenterie des Rois de France au XIV^e Siècle*, publiés pour la Société de l'Histoire de France par L. Douët-d'Arcq. Paris, 1857.
- EI *Comptes de l'Hôtel des Rois de France aux XIV^e et XV^e Siècles*, publiés pour la Société de l'Histoire de France par L. Douët-d'Arcq. Paris, 1865.
- EJ C. R. Conder, *Syrian Stone-Lore.* New Edition. London, 1896.
- EK *The Works of William Congreve.* Vol. I. London, 1719.
- EL Pierre Corneille, *Le Menteur.* Paris, 1649.
- EM Gaspar Correa, *Lendas das Indias.* Lisbon, 1858.

- EN Piero de' Crescenzi, *Trattato dell' Agricoltura*. Florence, 1605.
- EO Peter Cunningham, *The Story of Nell Gwyn*. Edited by Gordon Goodwin. Edinburgh, 1908.
- EP Robert Davidsohn, *Die Frühzeit der Florentiner Kultur. 3ter Teil: Kirchliches und Geistiges Leben, Kunst, Oeffentliches und Häusliches Dasein*. Berlin, 1927.
- EQ Luigi Dami, *The Italian Garden*. Translated by L. Scopoli. Milan-Rome, 1925.
- ER Charles Darwin, *Journal of Researches into the Natural History & Geology of the Countries visited during the Voyage round the World of H.M.S. "Beagle."* A New Edition. London, 1890.
- ES Daniel Defoe's *Tour Thro' the Whole Island of Great Britain* (1724, 1725 and 1727). 2 vol. London, 1927.
- EU *Traité Raisonné de la Distillation, ou, La Distillation réduite en Principes, par M. Déjean, Distillateur*. 4e éd. Paris, 1777.
- EV *The Autobiography and Correspondence of Mary Granville, Mrs. Delany*. . . . Edited by Lady Llanover. 3 vol. London, 1861.
- EW Sri Mukul Chandra Dey, *My Pilgrimage to Ajanta & Bagh*. With an introduction by Laurence Binyon. London, 1925.
- EX *Diaries of the Court Ladies of Old Japan*. Translated by Annie Shepley Omori and Kochi Doi. London.
- EY Guy Dickins, *Hellenistic Sculpture*. Oxford, 1920.
- EZ Alexander Dietz, *Stammbuch der Frankfurter Juden*. Francfort a/M, 1907.
- FA Diodorus Siculus, *Bibliotheca Historica*. Recognovit F. Vogel and C. T. Fischer. Leipzig, 1888-1906.
- FB Diogenes Laertius, *Leben und Meinungen berühmter Philosophen*. Uebersetzt und erläutert von Otto Apelt. 2 vol. Leipzig, 1921.
- FC *Les Six Livres de Pedacion Dioscoride Anazarbe de la Matière Medicinale*, translatez de latin en français. Lyon, 1559.
- FD Benjamin Disraeli, *The Young Duke*.
- FE *Un petit Traité de Cuisine écrit en français au Commencement du XIV^e Siècle. Publié par M. Douet d'Arcq. (In Bibliothèque de l'Ecole des Chartes, 21^{ème} année, 5^{ème} Serie, Tome 1^{er}. Paris, 1860.)*

- FF A. T. Drane, *Histoire de Saint Dominique*. Paris, 1893.
- FG Oscar Drude, *Handbuch der Pflanzengeographie*. Stuttgart, 1890.
- FH *Manuel d'Iconographie Chrétienne grecque et latine, avec une introduction et des Notes par M. Didron, . . . traduit du Manuscrit byzantin: Le Guide de la Peinture par le dr. Paul Durand, . . .* Paris, 1845.
- FI Comte Paul Durrieu, *La Miniature Flamande au Temps de la Cour de Bourgogne (1415-1530)*. Paris and Brussels, 1927.
- FJ Mrs. Mary Eales's Receipts. *Confectioner to her late Majesty Queen Anne*. London, 1718.
- FK *A Treatyse of the Newe India, with other new founde landes and Ilandes as well eastwarde as westwarde, as they are knownen and found in these oure days, after the description of Sebastian Munster in his booke of universal Cosmographie. Translated out of Latin into Englische. By Rycharde Eden*. London, 1553.
- FL *Géographie d'Edrisi. Traduite de l'Arabe en Francais . . . et accompagnée de notes par P. Amédée Jaubert*. Paris, 1836.
- FM *The Castel of Helth. Corrected and in some places augmented by the fyrste authour therof, syr Thomas Elyot Knyght, the yere of oure lord 1541*.
- FN *The Encyclopædia Britannica*. 11th Edition. 1910-1911.
- FO *Epistolae Obscurorum Virorum: The Latin Text with an English rendering, notes, and an historical introduction by Francis Griffin Stokes*. London, 1909.
- FP *Pittura di Ercolano & Contorni*. Napoli, 1757.
- FQ George Etherege, *The Man of Mode, or, Sr Fopling Flutter*. A Comedy. London, 1676.
- FR *The Diary of John Evelyn*. Edited by William Bray. London, 1925.
- FS *The Wanderings of Felix Fabri*. Translated by Aubrey Herbert. Palestine Pilgrims' Text Society. London, 1896.
- FT Ugo Falcando, *Historia o Liber de Regno Sicilie e la Epistola ad Petrum Panormitane Ecclesie Thesauriarum*. Rome, 1897.
- FU *Le Giardini di Roma con le loro Piante Alzate e Vedute in Prospettiva disegnate ed intagliate da Gio. Battista Falda*. Rome, 1670.

- FV George Farquhar, *Love and a Bottle*. A Comedy. London, 1699.
- FV₂ *Consiglio di Marsilio Ficino fiorentino contro la pestilentia*. Florence, 1481.
- FW *Through England on a Side Saddle in the Time of William and Mary*. Being the Diary of Celia Fiennes. With an Introduction by the Hon. Mrs. Griffiths. London, 1888.
- FX *Observations of William Finch, merchant, taken out of his large Journall*. (In Purchas His Pilgrimes in five books.) London, 1625.
- FY *Histoire de la Grande Isle de Madagascar composée par le Sieur de Flacourt, Directeur Général de la Compagnie Française de l'Orient, & Commandant pour Sa Majesté dans ladite Isle, & Isles adjacentes*. Paris, 1658.
- FZ *St. Clement Danes. A Guide: Historical and Descriptive*. By Edward Foord. London, 1915.
- GA Carl Fries, *Die Attribute der christlichen Heiligen*. Leipzig, 1915.
- GB "Ueber einige antike Samen aus dem Orient." *Vorläufige Mitteilung von Dr. Franz v. Frimmel*. (In *Sitzungsberichte d. kais. Akademie der Wissenschaften in Wien. Philosophisch-historische Klasse* 1914, Vol. 173, Section I, p. 181.)
- GC Cl. Galen: *De facultatibus alimentorum libri III*. Ed. C. G. Kühn, Leipzig, 1823.
- GD Cl. Galen: *De simplicium medicamentorum facultatibus libri XI*. Ed. C. G. Kühn, Leipzig, 1826.
- GE *Le Dieci Giornate della Vera Agricoltura, e Piaceri della Villa*. Di M. Agostin Gallo, in *Dialogo*. Venice, 1566.
- GE₂ *Le Vinti Giornate dell'Agricoltura et de Piaceri della Villa*. Di M. Agostin Gallo. 2nd ed. Turin, 1579.
- GF *A Journal of the First Voyage of Vasco da Gama, 1497-1499*. Translated and edited, with Notes, an Introduction and Appendices, by E. G. Ravenstein. London, 1898. [This is the famous *Roteiro de Vasco da Gama*, first published in Porto in 1838.]
- GG Gargillii Martialis *Medicinae ex oleribus et Pomis*. Ed. Teubner, Leipzig, 1875.
- GH Raffaele Garrucci, *Vetri ornati di figura in oro trovati nei cimiteri dei cristiani primitivi de Roma*. Rome, 1858.
- GI *Id., Cimitero degli antichi Ebrei*. Rome, 1862.

- GJ *Id.*, *Storia della arte cristiana nei primi secoli della chiesa*. 6 vol. Prato, 1881.
- GK *Tractado em que se cõtam muito por estêso as cousas da China, cõ suas particularidades, & assi do reyno dormuz cõposto por el R. padre frey Gaspar da Cruz da ordẽ de sam Domingos. Dirigido ao muito poderoso Rey dom Sebastian nosso señor*. Evora, 1569.
- GL [Geoponica]. Γεωπονικα. *Agricultural Pursuits*. Translated from the Greek, by the Rev. T. Owen. 2 vol. London, 1805.
- GM John Gerarde, *The Herball*. London, 1597.
- GN Alice Getty, *The Gods of Northern Buddhism*. Oxford, 1914.
- GO A. v. Gleichen-Russwurm, *Elegantiae. Geschichte der vornehmen Welt im klassischen Altertum*. Stuttgart, 1912.
- GP *Id.*, *Die Gotische Welt. Sitten und Gebräuche im späten Mittelalter*. Stuttgart, 1922.
- GQ *Id.*, *Der Ritterspiegel. Geschichte der vornehmen Welt im Romanischen Mittelalter*. Stuttgart, 1923.
- GR *Cronica do Felicissimo Rei D. Manuel, composta por Damião de Góis. Nova Edição, conforme a primeira, anotada e prefaciada, dirigida por Joaquim Martins Teixeira de Carvalho et David Lopes*. Coimbra, 1926.
- GS Victor Golubew, *Documents pour servir à l'étude d'Ajanta. Les peintures de la première grotte*. Ars Asiatica. Brussels and Paris, 1927.
- GT *Hierusalemsche Reyse vanden eerw. Pater P. Anthonius Gonsales, Minder-Broeder Recollect, Voor desen Guardiaen tot Bethleem, . . .* Antwerp, 1673.
- GU Marie Luise Gothein, *Geschichte der Gartenkunst*. 2 vol. Jena, 1914.
- GV Ernest Grandidier, *La Céramique Chinoise*. Paris, 1894.
- GW Grenfell and Hunt, *The Oxyrhynchus Papyri, Part XIV*. London, 1920.
- GX Angelo de Gubernatis, *La Mythologie des Plantes*, 2 vol. Paris, 1878.
- GY Conte Guelfo Guelfi, *Vocabolario Araldico ad uso degli Italiani*. Milan, 1897.
- GZ *Memoirs of Count Grammont* by Count Anthony Hamilton. Edited by Gordon Goodwin. 2 vol. Edinburgh, 1908.

- HA "A Description of the Apparatus for making Experiments on the Refractions of Fluids: With a Table of the Specifick Gravities, Angles of Observations, and Ratio of Refractions of several Fluids." By Mr. Fra. Hauksbee, F.R.S. (In: *Royal Society Philosophical Transactions*, 1710, p. 204 ff.)
- HB E. B. Havell, *A Short History of India*. London, 1924.
- HC Eliza Haywood, *The Female Spectator*. 2nd ed. 4 vol. London, 1748.
- HD Victor Hehn, *Kulturpflanzen und Haustiere in ihrem Uebergang aus Asien nach Griechenland und Italien sowie in das übrige Europa*. 8te Auflage. Berlin, 1911.
- HE W. Botting Hemsley, *Report on the Botany of Juan Fernandez, the South-Eastern Moluccas, and the Admiralty Islands: The South-Eastern Moluccas*. (In "Report on the Scientific Results of the Voyage of H.M.S. Challenger during the years 1873-76.")
- HF *Rei Rusticae Libri Quatuor . . . Auctore DD. Conrado Heresbachio*. . . . Cologne, 1570.
- HG Conradus Heresbachius, *Four Bookes of Husbandry*. Newly Englished, and increased by Barnabe Googe. London, 1577.
- HH Gabriel Alonso de Herrera, *Libro de Agricultura*. Alcala, 1539.
- HI L. Herzfeld, *Handelsgeschichte der Juden des Altertums*. 2te Auflage. Braunschweig, 1894.
- HJ *Heures a l'usage de Rouen*, de Vêrard. Paris, 1503.
- HK *Heures a l'usage Dangers*, de Simon Vostre. Paris, 1510.
- HL W. Heyd, *Histoire du Commerce du Levant*. Reprint. Leipzig, 1923.
- HM Hobson-Jobson, *A Glossary of colloquial Anglo-Indian words and phrases, and of kindred terms, etymological, historical, geographical and discursive*. By Col. Henry Yule and A. C. Burnell. First published in 1886. New edition edited by Wm. Crooke. London, 1903.
- HN Judoci Hondii *Nova et accurata Italiae hodiernae descriptio*. Amsterdam, 1626.
- HO M. Horowitz, *Die Inschriften des alten Friedhofs der israelitischen Gemeinde zu Frankfurt a/M.* Frankfurt a/M, 1901.
- HP Cl. Huart, *Geschichte der Araber*. 2 vol. Leipzig, 1914-1915.

- HQ Clément Huart, *La Perse Antique et la Civilisation Iranienne*. Paris, 1925.
- HR Vicente Blasco Ibanez, *Le Pape de la Mer* (Roman). Paris, 1927.
- HS *Le Livre de l'Agriculture d'Ibn-al-Awam*
 كتاب الفلاحة
 Traduit de l'Arabe par J.-J. Clement-Mullet. Paris, 1864.
- HT *Voyages d'Ibn Batoutah. Texte arabe, accompagné d'une traduction par C. Defrémery et le Dr. B. R. Sanguinetti*. 4 vol. Paris, 1893.
- HU Ibn El-Beïthar, *Traité des Simples*. Publié par l'Institut National de France. Paris, 1877-1883.
- HV Ibn Haukal, *Kitab al-masālik wal-mamālik*. Ed. de Goeje. Leyden, 1873.
- HW Ibn Haukal, *Description de l'Afrique*. Traduite de l'Arabe par M. le Baron M. G. de Slane. Paris, 1842.
- HX *The Travels of Ibn Jubayr*, edited from a MS. in the University Library of Leyden, by William Wright. 2nd Edition revised by M. J. de Goeje. Leyden and London, 1907.
- HY Ibn-Gubayr (*Ibn Giobeir*), *Viaggio in Ispagna, Sicilia, Siria e Palestina, Mesopotamia, Arabia, Egitto compiuto nel secolo XII*. Prima traduzione, fatta sull'originale arabo da Celestino Schiaparelli. Roma, 1906.
- HZ *Masālek al-mamālek, Via Regnorum. Descriptio Ditionis Moslemicae Auctore Abu Ishak al-Farisi al-Istakhri*. Edited by M. J. De Goeje. 2nd ed. Leyden, 1927.
- IA *Das Buch der Länder von Schech Abu Ishak el Farsi el Iztachri. Aus dem Arabischen übersetzt von A. D. Mordtmann*. Hamburg, 1845.
- IB Joseph Jacobs, *Jewish Contributions to Civilization*. Philadelphia, 1919.
- IC Karl F. W. Jessen, *Botanik der Gegenwart und Vorzeit in culturgeschichtlicher Entwicklung*. Leipzig, 1864.
- ID *The Jewish Encyclopedia*. New York and London, 1916.
- IE *Jewish Travellers*. Edited, with an Introduction, by Elkan Nathan Adler. London, 1930.
- IF George W. Johnson, *A History of English Gardening*. London, 1829.

- IG Henry L. Joly, *Legend in Japanese Art*. London, 1908.
- IH *Mirabilia Descripta, The Wonders of the East*, by Friar Jordanus of the Order of Preachers and Bishop of Columbium in India the Greater (c. 1330). Translated from the Latin original, as published at Paris in 1839 . . . with the addition of a commentary by Colonel Henry Yule. London, 1863.
- II Flavius Josephus, *Antiquities of the Jews*. Whiston's translation, revised by A. R. Shilleto. London, 1912.
- IJ Abel Jouan, *Recueil et Discours du Voyage du Roy Charles IX.* . . . Paris, 1571.
- IK Samuel Klein, *Jüdisch-Palästinisches Corpus Inscriptionum*. Vienna, 1920.
- IL Friedrich Kluge, *Etymologisches Wörterbuch der deutschen Sprache*. 7te Ausgabe. Strassburg, 1910.
- IM Heinrich Kohl and Carl Watzinger, *Antike Synagogen in Galilaea*. Leipzig, 1916.
- IN N. J. Krom, *Barabudur*. Archæological Description. 2 vol. The Hague, 1927.
- IO R. P. Henri-Dominique Lacordaire, *Vie de Saint Dominique*. 8e édition. Paris, 1871.
- IP Jean de la Fontaine, *Les Amours de Psyché et de Cupidon*. Paris, 1825.
- IQ *Memoires d'Olivier de la Marche, Maitre d'Hotel et Capitaine des Gardes de Charles le Téméraire*. Publiés pour la Société de l'Histoire de France par Henry Beaune and J. d'Arbaumont. 4 vol. Paris, 1883-1888.
- IR *Royal Cookery: or, the Complete Court-Cook. Containing the choicest Receipts in all the particular Branches of Cookery, Now in Use in the Queen's Palaces of St. James's, Kensington, Hampton-Court, and Windsor.* . . . By Patrick Lamb, Esq.; near 50 Years Master-Cook to their late Majesties King Charles II, King James II, King William and Queen Mary, and to Her Present Majesty Queen Anne. . . . London, 1710.
- IS₁ *The memorable voyage of M. James Lancaster about the Cape of Buona Esperanza, along the Easterne coast of Africa, beyond Cape Comori, as far as the maine land of Malacca, and from thence home againe, begun in the yeere 1591.* (In Hakluyt's "Principal Navigations, Voyages, Traffiques, & Discoveries of the English Nation.")

- IS₂ *The first voyage made to East-India by Master James Lancaster, now Knight for the merchants of London, Anno 1600. . . .* (In Purchas His Pilgrims.) London, 1625.
- IT *Mémoires de M. de La Porte, premier valet de chambre de Louis XIV.* Genève, 1755.
- IU *Historia de las Indias por Bartolomé de las Casas, publicada ahora por vez primera, conforme à los originales del autor, que se custodian en la Biblioteca de la Academia de la Historia y en la Nacional de la Corte.* (Vol. LXIII of the "Coleccion de Documentos inéditos para la Historia de España por el Marqués de la Fuensanta del Valle y D. José Sancho Rayon). Madrid, 1875.
- IV Berthold Laufer, *Sino-Iranica. Chinese Contributions to the History of Civilization in Ancient Iran with special reference to the History of Cultivated Plants and Products.* Chicago, 1919.
- IW La Varenne, *Le Cuisinier Français.* 2e éd. Paris, 1652.
- IX *Descrição do Reino de Portugal por Duarte Nunez de Leão.* Lisbon, 1610.
- IY Dr. Lucien Leclerc, *Histoire de la Médecine Arabe.* 2 vol. Paris, 1876.
- IZ *Nouveaux Mémoires sur l'Etat présent de la Chine. Par le P. Louis Le Comte de la Compagnie de Jésus, Mathématicien du Roy.* 2 vol. Paris, 1696.
- JA *Chronique de Jean Le Fèvre, Seigneur de Saint-Rémy.* Publiée pour la Société de l'Histoire de France, par François Morand. 2 vol. Paris, 1876-1881.
- JB *The Legacy of Israel.* Edited by Edwyn R. Bevan and Charles Singer. Oxford, 1927.
- JC Le Grand d'Aussy, *Histoire de la Vie privée des Français depuis l'Origine de la Nation jusqu'à nos Jours.* Nouvelle édition, avec des Notes, Corrections et Additions, par J. B. B. de Roquefort. 3 vol. Paris, 1815. [First published in 1782.]
- JD *Florilegium Politicum. Politischer Blumengarten durch Christophorum Lehmann.* 1630.
- JE Louis Lémery, *Traité des Aliments.* Seconde édition. Paris, 1705.
- JF Leo of Ostia: *Chronicum Antiquum Sacri Monasterii Cassinensis, Olim à Leone Cardinali, & Episcopo Ostiensi conscriptum: Nunc vero à Reverendo Patre D. Mattheo Lavreto Hispano . . . ac pluribus adnotationibus illustratum.* . . . Naples, 1616.

- JG V. Leroquais, *Les Sacramentaires et les Missels Manuscrits des Bibliothèques publiques en France*. 4 vol. Paris, 1924.
- JH *Mémoires-Journaux de Pierre de l'Etoile. Edition pour la première fois complète et entièrement conforme aux Manuscrits originaux. . . . Tome IX: Journal de Henri IV, 1607-1609*. Paris, 1881.
- JI Guy Le Strange, *Palestine under the Moslems*. London, 1890.
- JJ *Id., Baghdad during the Abbasiid Caliphate*. Oxford, 1900.
- JK *Fables of Aesop and other Eminent Mythologists: with Morals and Reflections*. By Sir Roger L'Estrange, Kt. 6th ed. London, 1714.
- JL *Libellus de politica conservativa Maris. Or, The pollicy of keeping the Sea*. (In Hakluyt's "Principal Navigations, Voyages, Traffiques & Discoveries of the English Nation.")
- JM Fürst E. M. Lichnowsky, *Geschichte des Hauses Habsburg*. 8 Teile. Vienna, 1836-1844.
- JN *The Voyage of John Huyghen van Linschoten to the East Indies*. From the old English translation of 1598. The First book, containing his description of the East, in 2 volumes. Edited by Arthur Coke Burnell and P. A. Tieffle. London, 1885.
- JO *Le Livre d'Heures de la Reine Anne de Bretagne. Traduit du Latin et accompagné de notices inédites par M. l'Abbé Delaunay*. 2 vol. Paris, 1841.
- JP *Comedias escogidas de Frey Lope Felix de Vega Carpio*. Madrid, 1855.
- JQ *Colleccion escogida de Obras no dramaticas de Frey Lope Felix de Vega Carpio*. Madrid.
- JR *Lettres de Louis XI, Roi de France. Publiées . . . par Joseph Vaesen & Etienne Charavay*. Paris, 1883-1909.
- JS Joannis de Loureiro, *Flora Cochinchinensis*. Lisbon, 1790.
- JT Immanuel Löw, *Flora der Juden*, Vol. III. Vienna and Leipzig, 1924.
- JU *A Selection from the Minor Poems of Dan John Lydgato*, edited by James Orchard Halliwell. London, 1840.
- JV Alessandra Macinghi negli Strozzi. *Lettere di una Gentildonna Fiorentina del Secole XVI ai Figliuolo esuli, pubblicate da Cesare Guasti*. Florence, 1877.

- JW *Macrobian Ambrosii Aurelii Theodosii . . . in somnium Scipionis libri II. Ejusdem Saturnaliorum libri VII.* Ed. J. Camerarius. Basle, 1535.
- JX Frederic W. Madden, *History of Jewish Coinage and of Money in the Old and New Testament.* London, 1864.
- JY Moses Maimonides, *The Guide of the Perplexed.* Translated from the original Arabic text by M. Friedländer. 2nd ed. London, 1910.
- JZ *The History of Mahammedan Dynasties in Spain extracted from the Nafhu-t-tib min ghosni-l-andalusi-r-rattib wa tarikh lisamu-d-din ibni-l-hattib*, by Ahmed Ibn Mohammed al-Makkari, a native of Telesman. Translated by Pascual de Gayangos, in 2 vol. London, 1840-43.
- KA Domenico Maria Manni: *Osservazioni istoriche sopra i Sigilli Antichi de'Secoli bassi.* 30 Tomi. Florence, 1739-1786. Vol. II (1739).
- KB Jean-H. Mariéjol, *La Vie de Marguerite de Valois, Reine de Navarre et de France (1553-1615).* Paris, 1928.
- KC *Mohenjo-Daro, The Excavated Cities.* By Sir John Marshall. (An article in *The Times* of January 4, 1928.)
- KD M. Val. *Martialis Epigrammaton Libri.*
- KE Maçoudi, *Les Prairies d'Or.* مروج الذهب
Texte et traduction par C. Barbier de Meynard.
Paris, 1861-77.
- KE₂ *Ragionamento dell'Excellentiss. M. Nicola Massa. Sopra le infermità, che vengono dall'aere pestilentielle del presente Anno MDLV.* Venice, 1656.
- KF [Mattheus Silvaticus]: *Liber pandectarum medicinae omnia medicine simplicia contenens quem ex omnibus antiquorum libris aggregavit M. Silvaticus . . .* Bologna, 1474.
- KG *Les Commentaires de M. P. André Matthiolus, Medecin Senois, sur les six livres de Pedacius Dioscoride Anazarbéen, de la matière médicinale. Traduit de latin en François, par M. Antoine du Pinet.* Lyon, 1655.
- KH *The Book of Sir John Maundeville, A.D. 1322-1456.* In Thomas Wright's "Early Travels in Palestine." London, 1848.

- KI *A Journey from Aleppo to Jerusalem at Easter A.D. 1697.* By Hen. Maundrell. 6th ed. Oxford, 1740. [First published in 1703.]
- KJ Georg Meister, *Der Orientalisch-Indianische Kunst- und Lust-Gärtner.* Dresden, 1692.
- KK Pauli G. F. P. M. Merulae *Cosmographiae generalis libri tres: item Geographiae particularis libri quatuor: quibus Europa in genere, speciatim Hispania, Gallia, Italia describuntur.* Antwerp, 1605.
- KL Christoforo di Messisbugo, *Banchetti Compositioni di Viande, et apparecchio generale.* Ferrara, 1549.
- KM *Commentarien ofte Memorien van den Nederlandtschen Staat, Handel en Oorloghen ende Geschiedenissen van onzen tyden. . . . Beschreven door Emanuel van Meteren.* Amsterdam, 1608.
- KN Ernst H. F. Meyer, *Geschichte der Botanik.* Königsberg, 1854.
- KO *Midrash Tanhuma* מדרש תנחומא
- KP M. Mignet, *Charles-Quint. Son Abdiction, son Séjour et sa Mort au Monastère de Yuste.* 5e ed. Paris, 1862.
- KQ J. Grafton Milne, *A History of Egypt under Roman Rule.* 2nd ed. London, 1913.
- KR Dr. Möller, *Die Botanik in den Fresken der Villa Livia.* (In *Mitteilungen des Kais. Deutschen Archaeologischen Institutes, Römische Abteilung.* Bd. 5 (1890), *Sitzungsprotokolle*, 28. März.) Rome, 1890.
- KS *Journal des Voyages de Monsieur Monconys . . . publié par le Sieur de Liergues, son fils.* Lyon, 1665-1666.
- KT Montaigne, *Journal de Voyage.* Publié par Louis Lautrey. Paris, 1906.
- KU *An Itinerary written by Fynes Moryson.* London, 1617.
- KV Baron Ferd. von Mueller, *Select Extra-Tropical Plants readily eligible for Industrial Culture or Naturalisation.* Melbourne, 1895.
- KW *Descriptio Imperii Moslemici auctore Al-Moqaddasi.* Ed. M. J. de Goeje. Leyden, 1906.
- KX *Description of Syria, including Palestine.* By Mukkadasi (c. A.D. 985). Translated from the Arabic and annotated by Guy Le Strange. Palestine Pilgrims' Texts Society. London, 1896.

- KY *The Sacred Tree*. [By the Lady Murasaki.] Being the second part of "The Tale of Genji." Translated from the Japanese by Arthur Waley. London, 1926.
- KZ *Blue Trousers*. [By the Lady Murasaki.] Being the fourth part of "The Tale of Genji." Translated from the Japanese by Arthur Waley, London, 1928.
- LA Joseph Murr, *Die Pflanzenwelt in der griechischen Mythologie*. Innsbruck, 1890.
- LB *Sefer Nameh, Relation de Voyage de Nasri Khosrau en Syrie, en Palestine, en Égypte, en Arabie et en Perse, pendant les Années de l'Hégire 437-444 (1035-1042)*. Publié, traduit et annoté par Charles Schefer. Paris, 1881.
- LB₂ Nâsir-i-Khusrau, *Diary of a Journey through Syria and Palestine* (A.D. 1047). Translated from the Persian and arranged by Guy Le Strange. Palestine Pilgrims' Texts Society. London, 1893.
- LC *Sefer-Nameh*, Nasri Khosrau. Berlin, 1920.
- LD *Viaggio fatto in Spagna, et in Francia, dal magnifico M. Andrea Navagiero, fu oratore dell'Illustrissimo Senato Veneto, all' Cesarea Maesta di Carlo V con la descrittione particolare delli luochi, & costumi delli popoli di quelle provincie*. Venice, 1563.
- LE [Nicander of Colophon.] *Nicandrea: Theriaca et Alexipharmaca recensuit et emendavit, fragmenta collegit, commentationes addidit Otto Schneider. Accedent scholia in Theriaca . . . scholia in Alexipharmaca. . . .* Leipzig, 1865.
- LF *A Description of the fortunate Ilands, otherwise called the Ilands of Canaria, with their strange fruits and commodities: composed by Thomas Nicols English man, who remained there the space of seven years together*. (In Hakluyt's "Principal Navigations, Voyages, Traffiques & Discoveries of the English Nation.")
- LG *A Noble Boke off Cookry for a Prynce houssolde or eny other estately houssolde*. Reprinted verbatim from a rare MS. in the Holkham Collection. Edited by Mrs. Alexander Napier. London, 1882.
- LH Pierre de Nolhac, *Marie-Antoinette*. Paris (no date).

- LI Michel de Nostredame [Nostradamus], *Excellent et moult utile Opusculé à tous necessaire qui desirent avoir cognoissance de plusieurs exquisés Receptes, divisé en deux parties.* Lyon, 1556.
- LJ. Okakura-Kakuzo, *The Book of Tea. A Japanese Harmony of Art Culture and the Simple Life.* London and Edinburgh, 1919.
- LK Garcia da Orta, *Coloquios dos Simples e Drogas da India. Edição publicada por deliberação da Academia Real das Sciencias de Lisboa. Dirigida e anotada pelo Conde de Ficalho.* Lisbon, 1891. [First published in Goa, 1563.]
- LL אוצר ישראל [Otsar Yisrael]. An Encyclopedia of all Matters concerning Jews and Judaism (in Hebrew). Edited by J. D. Eisenstein. 2nd ed. Berlin, 1924.
- LM *Recherches Italiennes et Françaises, ou Dictionnaire . . .* par Antoine Oudin. Paris, 1643.
- LN *Historia general y natural de las Indias, islas y tierra-firme del mar océano, por el capitan Gonzalo Fernandez de Oviedo y Valdés, primer cronista del nuevo mundo. . . .* 4 vol. Madrid, 1851-55.
- LO *The Oxford Book of English Verse, 1250-1900.* Chosen and edited by A. T. Quiller-Couch. Oxford, 1900.
- LP *The Palestine Exploration Fund Quarterly Statements.* London.
- LQ Rutilius Taurus Aemilianus Palladius, *De re rustica.* Paris, éd. Panckoucke, 1843.
- LR *Eleganter Palladius, lib. IV in Martio, tit. 10 cap. de citreo.*
- LS [The Paston Letters.] *Original Letters, written during the Reigns of Henry VI, Edward IV, and Richard III. By Various Persons of Rank and Consequence. . . . Digested . . . in Four Volumes* by Sir John Fenn. London, 1823.
- LT Felix Dahn, *Paulus Diaconus.* Leipzig, 1876.
- LU Pauly-Wissowa, *Real-Encyclopädie der Classischen Altertumswissenschaft.* Stuttgart, 1894, etc.
- LV Pausanias's *Description of Greece.* Translated with a Commentary by J. G. Frazer. 6 vol. London, 1913.
- LW *Diary and Correspondence of Samuel Pepys, F.R.S.,* ed. by Henry B. Wheatley. 10 vol. London, 1903-1904.

- LX *Histoires ou Contes du Temps Passé, avec des Moralités*. Par M. Perrault. Nouvelle Edition. The Hague, 1777.
- LY Pétrone, *Le Satiricon*. Trad. Louis de Langle. Paris, 1914.
- LZ *Opus Epistolarum Petri Martyris*. Amsterdam, 1760.
- MA August Pfizmaier, *Denkwürdigkeiten von den Früchten Chinas*. Vienna, 1874.
- MB *Lettres de Philippe II à ses filles les infantes Isabelle et Catherine écrites pendant son voyage en Portugal (1581-1583), publiées d'après les originaux conservés dans les archives royales de Turin, par M. Gachard*. Paris, 1884.
- MC C. Plinii Secundi *Naturalis Historiae Libri XXXVII*.
- MD [Plutarch] Plutarchi . . . *Symposiaca Problemata* . . . interprete H. Junio. Paris, 1547.
- ME Stanze di Messer Angelo Poliziano cominciate per la Giostra del Magnifico Giuliano di Piero de' Medici. (In "*Il Poliziano, il Magnifico, Lirici del Quattrocento, scelta e commento di Massimo Bontempelli*.) Florence [1925].
- MF *The Travels of Marco Polo, the Venetian*. The Translation of Marsden revised, with a selection of his notes. Edited by Thomas Wright. London, 1886.
- MG *The Histories of Polybius*. Translated by Evelyn S. Shuckburgh. 2 vol. London, 1889.
- MH Leopold M. Popper, *Die Inschriften des alten Prager Judenfriedhofss*. Francfort a/M, 1893.
- MI Dr. Friedrich Preisigke, *Wörterbuch der griechischen Papyrusurkunden*. Berlin, 1925. . . .
- MJ *Oeuvres de Rabelais*. Collationnées sur les Editions originales, accompagnées d'une Bibliographie et d'un Glossaire par Louis Moland. Nouvelle Edition, précédée d'une notice biographique par Henri Clouzot. 2 vol. Paris, 1920.
- MK *The whole Body of Cookery dissected: Taught, and fully manifested* . . . by William Rabisha. 2nd ed. London, 1675.
- ML John Rea, *Flora Ceres & Pomona*. London, 1665.
- MM Tallement des Réaux, *Historiettes*. Paris, 1854.
- MN Francesco Redi, *Esperienze intorno a diverse cose naturali, e particolarmente e quelle che ci son portate dall' Indie* . . . scritte in una lettera al . . . Athanasio Chircher. Florence, 1671.

- MO *Relation des Voyages faits par les Arabes et les Persans dans l'Inde et à la Chine dans le IX^e siècle de l'Ere Chrétienne. Texte arabe imprimé en 1811 par les soins de Feu Langlès, publié avec des corrections et additions et accompagné d'une traduction française et d'éclaircissements par M. Reinaud. 2 vol. Paris, 1845.*
- MP *M. Reinaud, Mémoire géographique, historique et scientifique sur l'Inde antérieurement au milieu du XI^e siècle de l'Ere Chrétienne d'après les écrivains arabes, persans et chinois. Paris, 1849.*
- MQ *Dr. Ludwig Reinhardt, Kulturgeschichte der Nutzpflanzen. I. Hälfte. Munich, 1911.*
- MR *Relacion de la Jornada del Excmo Condestable de Castilla, a las pazes entre Hespaña y Inglaterra, que se concluyeron y iuraron en Londres, por el mes de Agosto, Año M.DC.IIIII. Antwerp, 1604.*
- MS *Relazioni degli Ambasciatori Veneti al Senato, édité da Eugenio Albèri. Serie IIa (Relazione d'Italia), Volume III^o. Florence, 1846.*
- MT *Comte Théodore de Renesse, Dictionnaire des Figures Héraldiques. Brussels, 1897.*
- MU *Michel Revon, Anthologie de la Littérature Japonaise des Origines au XX^e Siècle. Paris, 1923.*
- MV *Revue Archéologique (Antiquité et Moyen-Age). 3^e Série, Tome III, Janvier-Juin 1884. Paris, 1884.*
- MW *De Christiana Expeditione Apud Sinas Suscepta ab Societate Jesu Ex P. Matthaei Ricii eiusdem Societate Commentariis Libri V. . . . Augsburg, 1615.*
- MX *Histoire de l'Expédition Chrestienne au Royaume de la Chine enterprinse par les PP. de la Compagnie de Jésus . . . tirée des commentaires du P. M. Riccius, par le P. N. Trigault, Et nouvellement traduite en français par le Sr. D. F. de Riquebourg-Trigault. Lyon, 1616.*
- MY *F. Rolle, Documents relatifs au Passage de Saint François de Paule à Lyon (1483). Lyon, 1864.*
- MZ *La Singolare Dottrina di M. Domenico Romoli, soprannominato Panonto, dell' ufficio dello Scalco, de i condimenti di tutte le viande. . . . Venice, 1570.*
- NA *Oeuvres Complètes de Ronsard. Texte de 1578. Publié avec compléments, Tables et Glossaire par Hugues Vaganay. 7 vol. Paris, 1924.*

- NB *Descriptio Palatii Pontificis in Vaticano ac Viridarii celeber, quo dicitur Belvedere*. Gio. Batta. de Rossi, Milanese, Rome (c. 1660).
- NC M. Rostovtzeff, *The Social and Economic History of the Roman Empire*. Oxford, 1926.
- ND William Roxburgh, *Flora Indica; or, Description of Indian Plants*. 3 vol. Serampore, 1832.
- NE Georgius Everhardus Rumphius, *Het Amboinsche Kruid-Boek*. 4 vol. Amsterdam, The Hague, and Utrecht, 1743-1751.
- NF Eldon Rutter, *The Holy Cities of Arabia*. London and New York, 1930.
- NG William Brenchley Rye, *England as seen by Foreigners in the days of Elizabeth and James the First. Comprising translations of the Journals of the two Dukes of Wurtemberg in 1592 and 1610; both illustrative of Shakespeare*. . . . London, 1865.
- NH Bernardin de Saint-Pierre, *Paul et Virginie*. Paris (Nelson).
- NI *Satyre Ménippée de la Vertu du Catholicon d'Espagne et de la Tenue des Estatz de Paris. Nouvelle Edition revue sur le texte complet de 1594 et publiée . . . par Edouard Tricotel*. 2 tomes. Tome I: *Satyre Ménippée*. Paris, 1877.
- NJ *Libreto delo Excellētissimo Physico maestro Michele Savonarola: de tutte le cose che se mazzano comunemēte e piu che commune: e di quelle se beveno per Italia*. . . . Venice, 1508.
- NK A. H. Sayce, *The Aryan Problem—fifty Years later*. An article in *Antiquity*, Vol. I, No. 2 (June, 1927).
- NL Adolf von Schack, *Poesie und Kunst der Araber in Spanien und Sicilien*. 2 vol. Berlin, 1865.
- NM Attilio Schiaparelli, *La Casa Fiorentina e i suoi Arredi nei Secoli XIV e XV*. Florence, 1908.
- NN A. F. W. Schimpfer, *Pflanzen-Geographie auf physiologischer Grundlage*. Jena, 1898.
- NO Ignaz Schipper, *Anfänge des Kapitalismus bei den abendländischen Juden im früheren Mittelalter*. Vienna and Leipzig, 1907.
- NP A. H. Bullen, *A Collection of Old English Plays*, 4 vols. London, 1882-85. Volume II.
- NQ Emil Schürer, *Geschichte des jüdischen Volkes im Zeitalter Jesu Christi*. 4te Auflage. Leipzig, 1911.
- NR G. Schweinfurth, *Arabische Pflanzennamen aus Aegypten, Algerien und Jemen*. Berlin, 1912.

- NS Magdelaine de Scudéry, *La Promenade de Versailles*. Paris, 1669.
- NT *Imperio de la China i cultura evangelica en el, por los Religios de la Compania de Jesus. Compuesto por el Padre Alvaro Semmedo de la propia Compania. . . . Publicado por Manuel de Faria e Sousa. . . . Madrid, 1642.*
- NU Olivier de Serres, *Le Théâtre d'Agriculture et Ménage des Champs*. 2 vol. Paris, 1805.
- NV ΣΤΜΕΩΝΟΣ ΜΑΓΙΣΤΡΟΤΑΝΤΙΟΧΕΙΑΣ ΤΟΥ ΣΗΘΙ ΣΥΝΤΑΓΜΑ ΚΑΤÀ ΣΤΟΙΧΕΙΩΝ . . . Simeonis Sethi, *Magistri Antiocheni Volumen De Alimentorum Facultatibus iuxta ordinem Literarum digestum*, ed. Martinus Bogdanus. . . . Paris, 1658.
- NW *Lettres de Madame Rabutin-Chantal, Marquise de Sévigné, à Madame la Comtesse de Grignan, sa Fille*. The Hague, 1726.
- NX *Recueil des Lettres de Madame de Sévigné à Madame la Comtesse de Grignan, sa fille*. 6 tomes. Paris, 1734.
- NY Shakespeare, *Coriolanus*.
- NZ *Id.*, *Love's Labour's Lost*.
- OA *Id.*, *A Midsummer-Night's Dream*.
- OB *Id.*, *Much Ado About Nothing*.
- OC *Tercera Parte de la Historia de la Orden de San Geronimo Doctor de Iglesia. Dirigida Al Rey nuestro Senor Don Philippe III Por Fray Ioseph de Siguença, de la misma Orden*. Madrid, 1605.
- OD Hans Sloane, *A Voyage to the islands Madera, Barbados, Nieves, S. Christophers and Jamaica, with the natural history of the herbs and trees, four-footed beasts, fishes, birds, insects, reptiles, etc., of the last of these islands*. London, 1707.
- OE *Chinese Materia Medica. Vegetable Kingdom*. Extensively revised from Dr. F. Porter Smith's Work by Rev. G. A. Stuart. Shanghai, 1911.
- OF W. E. Soothill, *China and the West*. London, 1925.
- OG *Spanisches Theater*. Herausg. v. Moritz Rapp, Hermann Kurz, Ludwig Braunfels. 6 Bde. Leipzig. [No date].
- OH Nicolai Specialis *Libri VIII rerum sicularum*. (In Muratori, *Rerum italicarum scriptores*, Milan ed., 1727, Vol. X.)
- OI Thomas Spratt, *History of the Royal Society of London for the Improving of Natural Knowledge*. London, 1667.

- OJ *Le Piacevole Notte di* M. Giovan-Francesco Straparola *da Caravaggio*. Venice, 1550.
- OK Eduard Strasburger, *Streifzüge an der Riviera*. Jena, 1913.
- OL Suetonius, *The Lives of the Caesars*. With an English Translation by J. C. Rolfe. 2 vol. London, 1920.
- OM בית הכנסת העתיק בבית-אלפא *The Ancient Synagogue of Beth-Alpha. An Account of the Excavations carried out, on behalf of the Jerusalem Hebrew University, in 1929, by E. L. Sukenik*. Jerusalem, 1932.
- ON Brig.-Gen. Sir Percy Sykes, *A History of Persia*. 3rd ed. 2 vol. London, 1930.
- OO *La Villa. Dialogo di* M. Bartolomeo Taegio. Milan, 1559.
- OP *Andances é viajes de* Pero Tafur *por diversas partes del mundo avidos* (1435-1439). 2 vol. Madrid, 1874.
- OQ *Le Vivandier de* Guillaume Tirel *dit Taillevent* . . . (1326-1395). *Publié sur le Manuscrit de la Bibliothèque Nationale . . . par le Baron Jérôme Pichon et Georges Vicaire*. Paris, 1892.
- OR תלמוד בבלי *The Babylonian Talmud*.
- OS תלמוד ירושלמי *The Jerusalem Talmud*.
- OT Vincenzo Tanara, *L'Economia del Cittadino in Villa Libri VII*. Bologna, 1651.
- OU Antonio Targioni - Tozzetti, *Cenni Storici sulla Introduzione di varie Piante nell'Agricoltura ed Orticoltura Toscana*. Nuova ristampa per cura del Dott. Eugenio Baroni. Florence, 1899.
- OV Sir William Temple (1628-1698), *Upon the Gardens of Epicurus; or of Gardening in the Year 1685*. (In "Sir William Temple Upon the Gardens of Epicurus, with other XVIIth Century Garden Essays." Introduction by Albert Forbes Sieveking. London, 1908.)
- OW Theophrastus, *Enquiry into Plants and Minor Works on Odours and Weather Signs*. With an English Translation by Sir Arthur Hort. 2 vol. The Loeb Classical Library. London, 1916.
- OX R. Campbell Thompson, *The Assyrian Herbal*. London, 1924.
- OY S. Tolkowsky, *The Gateway of Palestine: A History of Jaffa*. London, 1924.

- OZ *Id.*, *The History of the Cultivation of Citrus Fruits in Palestine*. Government of Palestine, Department of Agriculture and Forests, Agricultural Leaflets, Series IV (Horticulture), No. 22.
- PA *Id.*, *The Meaning of פֶּרִי הָאָדָר (Peri els hadar)*, *Leviticus xxiii*, 40. (In the *Journal of the Palestine Oriental Society*, Vol. VIII, No. 1, pp. 17-23.) Jerusalem, 1928.
- PB *Id.*, *Le Palle dei Medici: un Indovinello fiorentino*. In the "Marzocco" (Florence) of March 8, 1931.
- PC Franz Toussaint, *La Flûte de Jade. Poésies Chinoises*. Paris, 1902.
- PD Le Chevalier F. R. de Tussac, *Flore des Antilles*. 4 vol. Paris, 1808-27.
- PE *Histoire de Dauphiné et des Princes qui ont porté le nom de Dauphin*. By J. P. Moret de Bourchenu, Marquis de Valbonnais. 3 vol. Geneva, 1721.
- PF *Memorie per la storia dell'agricoltura nel dipartimento del Tronto; offerte al. sig. cavaliere Filippo Re professore nella r. università di Bologna da Orazio Valeriani*. (In *Annali dell'Agricoltura del Regno d'Italia compilati dal Cav. Filippo Re*. . . . Vol. XIX, July-August-September, 1813. Milan.)
- PG [Lorenzo Valla]. *Laurentii Vallensis Patritii Romani Historiam Ferdinandi Regis Aragoniae Libri Tres*. Rome, 1520.
- PH *De' Viaggi di Pietro della Valle il Pellegrino Descritti da lui medesimo in Lettere familiari all'Erudito suo Amico Mario Schipano. Parte Terza cioè L'India, co'l Ritorno alla Patria*. Rome, 1663.
- PI *Black Majesty. The Life of Christophe King of Haiti*. By John W. Vandercook. New York and London, 1928.
- PJ M. Terenti Varronis *Rerum Rusticarum Libri Tres*. Post Henricum Keil Iterum Edidit Georgius Goetz. Leipzig, 1912.
- PK *Les Voyages de Ludovico de Varthema, ou "Le Viateur en la plus grande Partie d'Orient."* Traduit en français par J. Balarin de Raconis. Publié par Ch. Schefer. Paris, 1888.
- PL *A Visit to Vaucluse . . . in May 1821*. By the Author of "The Trimester, in 1820." London, 1822.
- PM N. J. Vavilov, *Studies on the Origin of Cultivated Plants*. Leningrad, 1926.
- PN Garcilasso de la Vega, *Commentarios Reales, que tratan del origin de los Incas, reyes que fueron del Peru*. . . . Lisbon, 1609.

- PO Caius Velleius Paterculus. *Histoire Romaine*. Translated by M. Desprès. Paris, 1825.
- PQ *Les Poésies de Peire Vidal*. Editées par Joseph Anglade. 2^e éd. Paris, 1923.
- PR Geoffrey de Vinsauf, *Chronicle of Richard the First's Crusade*. In Bohn's "Chronicles of the Crusades." London, 1914.
- PS Virgil. With an English translation by H. Rushton Fairclough. 2 vol. London, 1916-18.
- PT Jacques de Vitry, *Histoire des Croisades*. Paris, 1825.
- PU *Poems, etc., written by Mr. Ed. Waller of Beckonsfield, Esq.* . . . London, 1645.
- PV *The Letters of Horace Walpole*, Fourth Earl of Oxford. Arranged and edited with Notes by Mrs. Paget-Toynbee. Vol. IX. (1774-76). London, 1904.
- PW Karl Friedrich Wander, *Deutsches Sprichwörter-Lexikon*. Leipzig, 1873.
- PX O. Warburg, *Monsunia. Beiträge zur Kenntnis der Vegetation des Süd- und Ostasiatischen Monsungebietes*. Bd. I mit II Tafeln. Leipzig, 1900.
- PY Captain F. Kingdon Ward, *The Overland Route from China to India*. (In "Journal of the Central Asian Society," Vol. XIV, 1927. Part III, p. 213 ff.)
- PZ H. Warmington, *The Commerce between the Roman Empire and India*. Cambridge, 1928.
- QA Ralph Warner, *The Dutch and Flemish Flower and Fruit Painters of the XVIIth and XVIIIth Centuries*. London, 1928.
- QB Sir George Watt, *The Commercial Products of India*. London, 1908.
- QC H. J. Webber, *Citrus Variety Studies*. (An article in the *California Citrograph*, April, 1928, p. 199 ff.)
- QD Ernest Weekly, *Surnames*. London, 1916.
- QE William T. Whitley, *Artists and their Friends in England 1700-1799*. London and Boston, 1928.
- QF M. Wiener, *Regesten zur Geschichte der Juden in Deutschland*. Hanover, 1862.
- QG *Love in a Wood, or, St. James's Park*. A Comedy . . . by Mr. Wytcherley. London, 1672.
- QH Xenophon, *Cyropédie et Retraite des Dix-Mille*. Trad. française de Gail. Edition revue . . . par Louis Humbert. Paris, 1889 (?).
- QI W. Perceval Yetts, *Symbolism in Chinese Art*. London, 1912.

QJ Colonel G. F. Young, *The Medici*. 2 vol. London, 1911.

QK *Zeitschrift für Romanische Philologie*. Halle, 1877/
.....

QL ציין. ידיעות החברה הא"י להיסטוריה

ZION. *Bulletins of the Palestine Historical and Ethnographical Society* (in Hebrew). Vol. I, No. 2. Jerusalem, 1927.

(3) STATISTICS.

QM FRUIT. *A Summary of Figures of Production and Trade relating to Apples, Pears, Bananas, Citrus Fruit, Grapes, Wine, Raisins & Currants, Canned Fruit*. Compiled in the Intelligence Branch of the Imperial Economic Committee. His Majesty's Stationery Office, London, 1937.

INDEX

- Aaronsohn, A., 237, 325
 Abd el-Latif, 105, 124, 125, 143, 144, 327
 Abdur-Rahman Ibn Mohammed Ibn Omar, 116
 Abrahams, I., 65, 327
 Abu Hanifa, 126
 Abu'l Khayr, 146, 147
 Abu Mansur Muwaffaq, 106
Accounts of the Lord Treasurer of Scotland, 299, 300, 327
Accounts of the Households of the Kings of France, 269, 271
 Acosta, Joseph de, 259, 327
 "Adam's apple," 139, 140, 141, 162, 177, 187, 236, 242, 303
 Afghanistan, 131
 Africa, 1, 39, 143-145, 241, 242, 249-257
 — East, 195, 241, 242, 249-251, 255. *See also* Madagascar, Malindi, Mauritius, Mombasa, Zanzibar
 —, North, *see* Algiers, Egypt, Libya, Mauretania, Morocco, Tunis
 —, South, 1, 256, 257
 —, West, 251-256. *See also* Azores, Canaries, Cape Verde Islands, Congo, Madeira, St. Helena, Sierra Leone
 Age which citrus trees will attain, 114, 155, 188, 189, 201, 202, 224
Agrumi, hamidhât, "sour fruits," 143, 144, 149, 160, 161
 Aimé, Bishop of Montecassino, 115, 327
 Ajanta Caves, 24
 Aladern, J., 24, 327
 Alamanni, Luigi, 157, 327
 Alberti, Leandro, 116, 117, 187, 188, 238, 327
 Albertus Magnus, 156, 327
 Albiruni (al-Biruni), 251
 Alexander Jannaeus, 53
 Alexander the Great, 43, 45-48, 51, 66, 71, 95, 103
 Algiers, *see* Mauretania
 al-Haj, 146, 147
 "Alif Lail wa-Lail," *see* "Arabian Nights"
 al-Istakhri, 131, 337
 Allen, W. H., 183, 327
 al-Mansur, 112
 Aloï, A., 100, 236, 325
 Alpalgus, Andreas, 133
 Alvares Cabral, Pedro, 242
 Alvares d'Almada, A., 253, 328
 Almeida, F. de, 245, 328
 Amari, M., 116, 117, 328
 Amélineau, E., 68, 328
 America, 1, 240, 257-268
 —, origin of citriculture, 240, 257-268, 323
 —, "Washington navel," 143, 158, 159, 252, 264, 265
 —, "Valencia late," 265
 —, early citrus exports to Europe, 265, 267, 276, 287, 296. *See also* Argentine, Bahamas, Bermudas, Barbados, Brazil, California, Chili, Curaçao, Florida, Haiti, Jamaica, Paraguay, Peru, Trinidad, Uruguay, West Indies

- Amherst, Alicia, 213, 215, 299, 328
 Ancona, Paolo d', 177, 328
 André, Bartholomew, 253
 Animals as carriers of citrus seeds, 1
 Anonymous pilgrim, 139, 328
 Antiphones, 46-48, 71-73
Apfelsine, 288, 289
 Apicius Caelius, 59, 60, 80, 328
 Apollodorus, 72, 328
 Apuleius, 69, 81, 83, 328
 Arabia, 39, 40, 106, 107, 134, 137, 138, 246; citrus in Arabic, botanical and horticultural literature, 106, 119, 120, 126, 127, 129, 130, 134-137, 146-148; in medical literature, 106, 119, 120, 128, 130-137; in poetry, 116, 118, 119, 122, 137, 145; in other writings, 10, 11, 105, 106, 114, 123-126, 131, 132, 143, 144, 251, 252
Arabian Nights, 117-119, 122, 145
 Arabs as gardeners, 113-119; in Spain, 113-115; in Sicily, 115-117; in Iraq, 117; in Egypt, 117-119
Arancia, *mala arancia*, *pomarancia*, 23, 236, 239, 282, 288, 289
Arangium, *arangia*, *arangus*, 23, 104, 117, 156, 227
Archives de l'Orient Latin, 65, 328
 Aretino, Pietro, 164, 328
 Argentine, 261
 Ariosto, Ludovico, 188, 328
 Aristocrates, 71, 72, 77
 Arrianos, 97, 98
Art Culinaire et des Repas chez les Peuples Modernes (De l'), 269-272, 274, 328
 Ascher ben Yechiel, Rabbi, 165
 Asia, South-Eastern, the original home of the genus citrus, 4, 5, 6, 12, 20, 21, 22, 323
 Assam, 4, 20, 21
 Assyria, *see* Mesopotamia
 "Assyrian apple," 79, 303
 Athenaios of Naucratis, 47, 58, 61, 62, 67, 69, 71, 72, 80-82, 100, 328
Atroga (or *atrunga*) *halitha*, 106, 236, 245. *See also* "Sweet lemon"
Atranges or *Atrangaia*, 65
Atronj, xii
Atrunga, *atrunga*, 24, 65, 105
 Aubrey, John, 211, 328
 Augustus, Emperor, 86, 87, 90, 96
Aurantium, 23
 Austria, 283, 284
 Avicenna (Ibn Sina), 131, 329
 Azores (Isl.), 251, 255, 265
- Baber, Emperor of Hindustan, 26, 329
 Babylonia, *see* Mesopotamia
 Bacon, Sir Francis, 306, 329
 Baghdad, 117, 119, 121, 122, 137. *See also* Mesopotamia
 Bahamas (Isl.), 258
 Baker, Thomas, 309, 329
 Balearic Islands, 111, 249
 Ballon, 276, 325
 Bandello, 188, 329
 Barbados, 265, 266
 Barbosa, Duarte, 242, 250, 329
 Beans, Feast of, 151
 Bedr ed-Din Abu Mohammed al-Hassan al-Habib, 252

- Behn, Mrs., 305
- Belgium, citrus imports, 289-292; Carnival of Binche, 290, 291; citrus in Flemish art, 151, 152, 223-227, 291-298; in Flemish horticultural literature, 224-227; in other writings, 291, 292. *See also* Low Countries
- Bembo, Pietro, 185, 329
- Benoit, F., 31, 32, 329
- Berliner, A., 65, 329
- Bermudas (Isl.), 259, 260
- Berteaux, E., 108, 329
- Bertrand, L., 244, 329
- Bible, The, 43, 52, 53
- Birds, as agents in propagating citrus, 1, 102, 261
- "Bitters," 13, 167, 272, 292, 295-298
- Blondus, Flavius, 155, 334
- Bluwstein, G., 65, 329
- Boccacio, 164, 185, 329
- Bohemia, 232
- Bonavia, E., 1, 23, 27, 33, 34, 37, 42, 44, 102, 105, 235, 236, 261, 325-329
- Bonnefons, Nicolas de, 278, 329
- Book of Nabataean Agriculture, The*, 56, 126, 127, 129, 148
- Botsford, F. H., 268, 329
- Bouvier, R., 173, 329
- Brandis, D., 4, 329
- Brantôme, 168, 199, 330
- Brazil, 260, 261, 264, 265. *See also* America
- Bretschneider, E., 6, 7, 8, 12, 330
- Breviary of Cardinal Grimani*, 270
- Brocquière, Bertrandon de la, 173, 330
- Bruyerin-Champier, 245, 272, 330
- "Buddha's hand citron," *see* Citron, "fingered"
- Burchardt of Mount Zion, 141, 330
- Burma, 8, 20, 21, 22
- Burton, Richard F., 107, 117, 118, 119, 122, 145, 330
- Buxtorf, Johannes, 284, 330
- Byne, M. S., and A., 113, 194, 330
- By-products from citrus*, "bitters," 13, 167, 272, 295-298; citric acid, 191; dried peel, 14, 287, 288, 292; essential oils, 41, 129, 131, 135, 136, 167, 280, 281, 288; juices, 165-167, 288; liqueurs, 167, 280, 281, 295-298; lotions, 288; lozenges, 287; ointments, 272, 273, 281, 288; powders, 281; scents, 288; scented oils, 135, 136, 273, 288; scented waters, 159, 160, 270, 273, 308, 309; snuff-boxes, 308; soaps, 273; sweets, 280, 281; syrups, 131, 133; wine, 11. In Assyria, 41; China, 11, 13, 14; Crete, 165, 166; England, 308, 309; France, 270, 272-275, 280, 281, 309; Germany, 288; Italy, 159, 160, 165-167, 287, 288, 292; Low Countries, 292, 295-298; Mesopotamia, 129; Spain, 135 f., 191; West Indies, 267
- Byzantine Empire, 103, 108, 109
- Cabral, Pedro, Alvares, *see* Alvares Cabral
- Cadamosto, Luis de, 252
- Caesar, C. Julius, 82, 83
- Caesarea, 62, 63, 139
- Cagnat, R., and Gauckler, P., 65, 330
- California, 262-265
- Camden's Britannia, Additions to, 211, 330
- Camões, 241, 330

- Canaries (Isl.), 252, 255
 Candolle, A. de, 1, 2, 4, 21, 22, 27, 28, 33-35, 38, 100, 330, 343
 Cape Verde Isl., 252, 256
 Caro, G., 111
 Carpenters, The Worshipful Company of, 300, 301, 331
 Carthage, 100
 Carvajal, Marmol, 117
Casita del Principe, La, 89
 Cassianus Bassos, 75
 Castanhedo, Fernando Lopes, de, 241, 242, 250, 331
 Castro, João de, 244, 249
 Cause, D. H., 232, 331
 Cavendish, G., 308, 331
 "Cedar apple," 52-56, 70, 80-84, 105, 109, 139-141, 156, 178, 205, 299
 Cedernelli, 110, 167
Cédral, 83
Cèdre, cedro, cedrus, 78, 79, 80, 81, 83, 104, 156, 178, 279, 288
 Cerceau, Jacques Androuet du, 202, 331
 Charles V, Emperor, 114, 194, 195, 201
 Charles VIII, King of France, 200, 331
 Charlesworth, M. P., 78, 331
 Chérif, Ahmed, 119, 130, 132, 331
 Chili, 261, 262
 China, 4-17, 19-22; *Poncirus trifoliata*, 4, 6, 7; citrons, 8, 9, 10, 11, 12; "fingered citrons," 5, 6, 8, 9; lemons, 11, 12; oranges, 5 ff.; sweet oranges, 8, 9, 11, 246-249; mandarines, 9, 12; shaddocks, 6, 7, 12; kumquat, 12, 13; citrus in Chinese art, 6; in Chinese botanical and horticultural literature, 6, 7, 12, 13, 14; in Chinese medical literature, 12; in Chinese poetry, 6, 7, 8, 9, 10, 13; in, other Chinese writings, 6, 7, 8, 11; in Chinese ritual, 8
 "China oranges," 247-249, 275, 276, 280, 288, 289, 303, 304
 Chledowski, C., 166, 331
Chü, xiii, 7, 12, 13
Chü lu (Han Yen-chih), 12, 13, 14, 296
 Cinderella, 274
Citreum, citrea, citria, 79, 80, 81
 Citron, original home of, 323; "Ethiopian citron," 106, 107; "red citron," 105; "sweet citron," 106; "spherical citron," 104-106, 123-126, 137, 138, 140, 145, 147, 148, 156; "citron" often used for orange, lemon, etc., 104-107, 124, 125, 137, 138, 140, 145, 147, 148, 156, 214; the citron in Jewish ritual, *see* "etrog"
 —, "fingered," in China, 5, 6, 8, 9; in India, 24; in Assyria, 41, 42; in Egypt, 44; in Palestine, 143
 "Citron apple," *malum citreum, poma citrina*, 80, 81, 83, 140, 159, 299
Citrus maxima Marill, 4, 12, 158
 — *medica*, L., 12
 — — *conifera*, 56
 — — *nobilis* Lour., 12, 16
 Citrus, wrongly so named, 51-56, 69, 77-84, 139-141, 156, 178
 Civinini, Gio. Domenico, 47, 325
 Clavijo, Ruy Gonzalez de, 186, 331
 Cochinchina, 4
 Coins, citrus on Jewish, 53-55, 64
 Coit, J. Eliot, 100, 124, 264, 325
 Columbus, Christopher, 257, 258, 323
 Commelijn, 231, 292, 325
 Conder, C. R., 55, 331
 Confucius, 6
 Congo, 253, 256
 Congreve, William, 309, 331

- Constantia, Tomb of, 108, 109
 Constanza, Church of St. (Rome), *see* Constantia
 Consumption of citrus fruits in different countries, 313, 316, 319-321
 Cookery books, Italian, 166-167, 342, 346; French, 269, 271, 277-279, 328, 356; English, 306, 338, 343, 345
 Cordova, 113, 114
 Corfu (Isl.), 171; citron trade in, 171, 284
 Corneille, Pierre, 206, 331
Corp. gloss. lat., 80
 Correa, Gaspar, 242, 250, 331
 Cost (retail price) of citrus fruits, in ancient Judaea, 62; in Roman Italy, 92; in Portugal, 245 (A.D. 1600); in France, 269 (1359), 270 (1412); in Germany, 284 (1603); in England, 300 (1533), 301 (1501, 1504, 1546), 305 (1668), 309 (1776)
 Crescentius (Piero de' Crescenzi), 156-158, 332
 Crete (Isl.), 122
 Cultivation, methods of, in Persia, 49, 129, 130; in Greece, 75-77, 91-92; in Italy, 75-77, 91-94, 157, 182-190; in Mesopotamia, 129, 130; in Egypt, 65 ff.; in Spain, 146-148, 191, 192; in France, 203-206, 210, 211; in Belgium, 226, 227; in Holland, 231, 232
 Cunningham, F., 304, 305, 332
 Curaçao (Isl.), 265, 287
 Da Gama, Vasco, 240, 241, 249, 323, 334
 Damascene, the, 131
 Dami, L., 186, 190, 332
 Dante, 184
 Darwin, Charles, 6, 332
 Davidsohn, R., 184, 332
 Davis, R. A., 1, 325
 de Bruyn, Cornelis, 143, 330
 Defoe, Daniel, 211, 212, 305, 332
 Déjean, 280, 332
 Delaney, Mrs. (Mary Granville), 308, 332
 Dey, Sri Mukul Chandra, 24, 332
 Diaries of the Court Ladies of Old Japan, 18, 19, 332
 Dickins, G., 73, 332
 Didron, M., 177, 333
 Dietz, A., 285, 332
 Diocletian, edict of, 80, 92
 Diodorus Siculus, 46, 332
 Diogenes Laertius, 46, 332
 Diophanes, 105
 Dioscorides, 60, 61, 70, 80, 160, 332
 Disraeli, Benjamin, 216, 332
 Dominic, St., orange-tree of, 155, 188, 189
 Douet-d'Arcq, 269, 270, 331, 332
 Drane, A. T., 155, 333
Drang nach Osten, 95, 96
 Drinks, citrus in preparation of, tea, 9, 16; punch, 34; wine, 11, 13, 59, 60, 167, 272, 288, 292, 295-298; syrups, 131, 133; lemonades and orangeades, 133, 134, 165, 166, 278-280, 306, 307; lime juice, 267; liqueurs, 281, 292, 295-298; in China, 9, 11, 16; in Japan, 16; in the Malay Archipelago, 34; in ancient Rome, 59, 60; in Italy, 165, 167; in France, 272, 278-280; in Germany, 288; in the Low Countries, 292, 295-298
 Drude, O., 40, 333
 du Barry, Madame, 277, 280
 Durand, P., 177, 333
 D'Urfe, 304
 Durrieu, P., 271, 333

Eale, Mary, 308, 333

Eden, Richard, 212, 332

Edrisi, *see* Idrisi

Egypt, 40, 43, 44, 65-68, 123, 142-144. Citron, 43, 44, 61, 62, 66-68, 118, 137, 144, 145; lemon, 99, 100, 119, 127, 132-134, 143, 144; lime, 99, 118, 122; mandarine?, 144; orange, 99, 105, 106, 118, 142; sweet oranges, 124, 125, 137, 144, 145, 238, 246; shaddock, 118, 145, citrus in Coptic writings, 67-68

Elegantier Palladius, 80, 344

Elyot, Sir Thomas, 306, 333

Encyclopædia Britannica, 7, 124, 234, 251, 252, 254, 333

England, 211-216, 298-312. Orange-houses, 211-216; at Beddington, 211-213; at Burghley House, 212-214, 302; at Kew, 215; at Wimbledon, 215. "China Oranges," 303, 304, 309; "Seville oranges," 309; mandarines, 216; citrus trade, 299-305, 307, 308; "sale by the candle," 307, 309. Citrus in art, 213, 214; in botanical and horticultural literature, 104, 105, 214, 216, 230, 265, 266; in medical literature, 306; in poetry, 212, 260, 266, 300, 304-308; in other writings, 139, 142, 165, 166, 187, 189, 190, 211, 212, 215, 216, 250, 251, 253-255, 279, 280, 298-309; in food, 299-301; in drinks, 307; scents, 308-309; in the English language, 302, 303, 310-312. "Orangeism," "orangemen," 310-312; "Oranges and Lemons," nursery rhyme, 301, 302; "Oranges and Lemons Day," 301, 302; "Orange Moll," "Orange-girls," "orange-miss," "orange-wives," etc., 303-306; Nell Gwynn, 304-306

Epistolæ Obscurorum Virorum, 189, 333

Etherege, 307, 308, 333

"Ethiopian citron," 106, 107

Etrog, xiii, 24, 41, 51-58, 62-65, 77, 88-90, 106, 107, 140, 141, 282-286.

E. merchants, 57, 58, 111, 170, 171, 282-286; their surnames, 285, 286

Evelyn, John, 333

Exports of citrus fruits from principal producing countries, 318, 319

Fabri, Felix, 141, 333

Faccardine (the Emir Fakhr ed-Din), 141, 142

Falcando, Ugo, 154, 333

Falda, G. B., 187, 333

Farquhar, George, 309, 334

Fawcett, H. S., 308

Felicia mala, 106

Felix Fabri, *see* Fabri, Felix

Ferrarius, J. B., xi, 73, 74, 101, 144, 155, 157, 158, 161, 162, 171, 190, 225, 248, 252, 325

Ficino, Marsilio, 160, 334

Fiennes, Celia, 215, 334

Fiji (Isl.), 34

Finch, William, 253, 334

Flacourt, de, 250, 334

Flavius, Blondus, 155, 334

Florence, 110, 167-170, 181-185, 187, 188

Florentinus, 75-77, 91-93, 105, 191, 335

Florida, 1, 2, 262, 263

Folklore, citrus in Jewish: good or bad omen, 62; effect on pregnant women, determination of sex, character of child, 62

Font de Mora, R., 100, 325

- Food, citrus in. As seasonings, 59, 132, 134, 149, 150-154, 159, 165-167, 196, 243, 270-272; substitute for vinegar, 133; in salads, 166, 167, 271, 277, 306; pickled, 141, 148, 306; candied fruit, 150, 166, 167, 259, 269, 275; candied peels, 167, 269, 306; candied blossoms, 166; fried fruit, 271; stuffed fruit, 166; creams, 306; cakes, 281; jellies, 306; marmalades, 275; pastes, 306; syrups, 306. With roast meat, 152, 196, 243; with roast fowl, 150, 166, 196, 270-272, 291 f., 299, 306; with game, 271, 291, 299; with fish, 152, 153, 166, 167, 294; with caviare, 166, 306; with lobster, crab, etc., 166, 294, 295; with oysters, 166, 294, 295; with eggs, 167; with roasted chestnuts, 278; as hors d'œuvre, 137
- Formosa (Isl.), 33
- Fortunella, 12. *See also* kumquat
- France, 198-211, 269-282. Citrus grown commercially, 198, 199, 203, 275, 280, 281; citrus in gardening, 199-211; orange-houses, 190, 201-211; orange blossoms used, 207-210, 275, 280-282; trade in fruits, 199, 271, 275, 276, 280, 281; in blossoms, 275, 281; in trees, 206; in scents, 270, 272, 273, 275, 280, 281; citrus in food, 269-272; "limonadiers," 278, 279; "Portugal oranges," 275, 276, 279; "China oranges," 275, 276, 280; "Indian oranges," 275, 276, 279; "Malta oranges," 279; Louis XIV, 201, 206-211, 276, 277; Versailles, 201, 206-211, 219, 231, 232, 276; Louise de la Fayette, 277; Madame du Barry, 277, 280; citrus in art, 151, 200, 201, 208, 211, 270-272, 289; citrus in botanical and horticultural literature, 1, 2, 28, 100, 104, 124, 140, 203-206, 210, 216, 266, 275, 276; in medical literature, 272, 273; in poetry, 202, 208, 209, 273, 274, 282; in other writings, 139-141, 164, 165, 167, 198, 209-211, 227, 238, 247, 248, 250, 267, 269, 273-280
- "French orange," *burtugan fransawi*, 105, 124, 125, 144, 237, 238, 244, "French red lemon," 105, 124, 125, 144, 237, 238
- Friends Islands, 34
- Fries, C., 178, 334
- Galen, 60, 80, 81, 348
- Gallesio, G., xi, xii, 28, 100, 104, 105, 123, 124, 141, 150, 155, 159, 168, 234, 252, 325
- Gallo, Agostino, 155, 186, 334
- Games, citrus fruits in, 161-163, 282, 290, 291
- Gardening, citrus in. In China, 11; Italy, 84, 85, 107, 108, 157, 182-190, 199; Arab countries, 112-115; Spain, 113-115, 192-195, Sicily, 115-117; Egypt, 117-119; France, 199-211; England, 211-216, 230; Germany, 216-223; Belgium, 224-227; Holland, 230-232
- Gargilius Martialis, 60, 80, 92, 334
- Garrucci, R., 64, 65, 334
- Gaspar da Cruz, 247, 335
- Geographical names, citrus in, *see* Names, geographical
- Geoponica, *see* Florentinus
- Gerarde, John, 303, 335
- Germany, 211, 216-223, 282-289. Citrus in gardening, 216-223; orange-houses, 204, 216-221; citrus trade, 282-288; Italian orange pedlars suspected of poisoning the population, 286, 287; names for citrus, 288, 289; Oranienbaum, 218; Oranienburg, 218; Pomeranzschiesse, 282; citrus in German art, 218, 283, 289; in botanical and horticultural literature, 214, 217, 221-223, 265; in medical literature, 287, 288; in other writings, 141, 156, 189, 217, 232, 282, 283
- Getty, Alice, 23, 335

- "Give guest orange," 12
 Gleichen-Russwurm, A. von, 48, 150, 163, 282, 335
 Goes, Damião de, 242, 244, 251, 335
 Goetze, E., xi, 4, 114, 145, 244, 247, 248, 251-253, 261, 325
 "Golden Apples" (Proverbs xxv. 11), 43
 Golubew, V., 24, 335
 Gonzales, Anthony, 142, 335
 Googe, Barnabe, 214. *See also* Heresbach, Conrad von
 Gothein, Marie Luise, 11, 70, 86, 184, 185, 187, 189, 200, 217-221, 232, 335
 Graetz, H., 111
 Grainger, James, 266
 Granada, 114, 115
 Grandidier, E., 335
 Granville, Mary (Mrs. Delaney), 308, 332
 Grapefruit, xiii, 158, 265-267, 323; its original home, 323; early commercial imports into Europe; 265; origin of its name, 266, 267; pampelmoes, pamplemousse, 250, 265, 266. *See also* Shaddock
 Greece, 46-51, 66, 67, 71, 73-81, 101. First acclimatization of citrus, 46-51; citrus in Greek art, 73; in Hellenistic art, 66, 67, 87, 100-102; in botanical and horticultural literature, 48-51, 75-77, 105; in medical literature, 60, 61, 70, 80, 81; in other writings, 46-48, 61, 62, 67-69, 72, 80-82, 103, 105, 106; in ritual, 71, 72, 77
Gregorii Epistolae, 111
Gregorii Opp., 111
 Grenfell and Hunt, 67, 335
Grimani, Breviary of Cardinal, 270
 Grube, Hermann, 287, 325
 Gubernatis, A. de, 178, 179, 246, 335
 Guelfi, Guelfo, 168, 335
 Guerreiro, Fernão, 253
- Hadar*, 52-56
 "Hairy citrus" (*hammadh shu'ayri*), 144
 Haiti, 257-259, 268; Duke of Marmelade, 268; Duke of Limonade, 268
 Hamilton, Count, 305, 335
 Han Yen-Chih, 7, 8, 9, 11, 12, 13, 14, 296, 325
 Happiness, citrus as symbols of, 5, 6, 9
 Haterii, Tomb of the, in Rome, 88, 90
 Hauksbee, F., 309, 336
 Havell, E. B., 31, 32, 40, 53, 336
 Haywood, Eliza, 212, 309, 336
 Heberer, Michael, 217
 Hehn, V., 51, 100, 336
 Hemsley, W. B., 28, 336
 Herakles, Farnese, 73
 Heraldry, citrus in, 167-170, 226-229
 Heresbach, Conrad von, 104, 105, 214, 217, 336
 Herrera, Gabriel Alonso de, 137, 191, 192, 336
 Herzfeld, L., 62, 336
 Hesperides, apples of the, 46, 47, 69, 71-75, 77, 87, 157, 158, 229
 Hesychios, 106
 Heyd, W., 21, 31, 120, 121, 336
 Hiero, King of Syracuse, 82
 Himalaya, 4, 22, 26
 Hippalos, 97, 98
 Hobson-Johnson, 4, 22, 26, 34, 266, 336

- Holland, citrus imports, 265, 289, 292, 296; citrus in Dutch art, 151, 230-231, 291-298; in botanical and horticultural literature, 33-35, 231, 232, 248, 292; in other writings, 143, 247, 250, 254; "bitters," 20, 167, 292, 295-298. *See also* Low Countries
- Homer, 82
- Hondius, Judocus, 104, 169, 336
- Honey, citrus fruits preserved in, 13
- Horace, 78
- Horowitz, M., 285, 336
- Hours, Books of, 83, 178, 200, 336, 340
- Huart, Clément, 45, 48, 70, 113, 121, 126, 251, 336, 337
- Hume, Harold H., 263, 267, 325, 326
- Hutten, Ulrich von, 189
- Ibañez, Blasco, 228, 337
- Ibn al-Awam, 107, 127, 129, 146-148, 337
- Ibn al-Beithar, 52, 60, 126, 129-136, 143, 148
- Ibn Batutah, 114, 145, 337
- Ibn Hajaj, 146
- Ibn Hauqal, 145, 337
- Ibn Iyâs, 105, 124, 125, 144, 145, 235
- Ibn Jamiya, 132-134, 143, 148, 326
- Ibn Jubayr, 121, 131, 337
- Ibn Wahshiya, *see* *Book of Nabataean Agriculture*
- Idrisi, the Sherif, 132, 145, 333
- Imports of citrus fruits into the chief consuming countries, 319-322
- India, 4, 20-32, 39, 40, 95-104; oranges, 22, 23, 26-28, 128; oranges, sweet, 22, 23, 234, 240, 242, 243, 245, 247; citrons, 21-24; "fingered citrons," 24; lemons, 21-26, 131; limes, 21, 22, 24-26, 131; shaddocks, 26, 34; citrus names in Sanskrit, 23, 24, 52; citrus in Indian art, 23, 24, 35, 36; in medical literature, 23; in religious literature, 23
- "Indian apple," 106
- "Indian oranges," 275, 279
- Indo-China, 1, 20, 21, 26
- Ionia, 69, 70
- Iraq, *see* Mesopotamia
- Isaac Ben Shlomoh, 130, 131
- Ishaq Ibn Imran, 130
- Isidorus Hispalensis, 110
- Islam, the rise of, 112 f., 149
- Ismail Ibn Mohammed al-Shakandi, 114
- Israeli, Ishaq Suleyman al-, *see* Isaac Ben Shlomoh
- Isserlein, Israel, 171, 284
- Istakhri, Abu Ishaq al-Farsi al-, 24, 25, 131, 337
- Italy: Citrons, 73-94, 101, 108-110, 142, 150 f., 235, 284-286; oranges, 99-109, 142, 149, 235-239, 243; oranges, sweet, 166, 235-239, 243, 245, 248, 249; lemons, 99-104, 107-110, 149 f., 157; limes, 99, 102, 105; shaddocks, 158, 159, 162. Exports of citrus trees, 231; of citrus fruits, 57, 58, 170, 171, 283-287; of citrus by-products, 287, 288; *see also* Trade. Citrus in Roman art, 73, 74, 86-90, 100-104, 107-109; in Italian art, 150-153, 169, 170, 173-183; in Roman botanical and horticultural literature, 69, 75-77, 85, 86, 91-94, 106; in Italian ditto, 104, 156-159, 186, 187, 190, 197, 248, 252; in Roman medical literature, 60, 92; in Italian, 159, 160; in classical Latin poetry, 60, 61, 69, 79, 80, 85, 106; in neo-Latin poetry, 110, 169, 186; in Italian poetry, 163, 169, 187, 188, 227, 228; in other classical Latin writings, 59, 69, 79-83, 85, 87, 88, 91, 92; ditto neo-Latin, 104, 105, 117, 139-141, 154, 155; ditto Italian, 29, 116, 164, 166, 167, 184, 188, 189, 192, 193, 196, 236, 247

- Jacobs, J., 149, 337
 Jaffa, 53-55, 236, 237
 Jaffe, Mordechai, 165
 Jamaica : Grapefruit, 265-267 ; sour limes, 267 ; lime juice, 267
 Japan, 4, 14-20 ; origin of Japanese citrus, 15-17 ; *tachibana*, *see* mandarines ; citrus in Japanese poetry, 17, 18, 19 ; in other writings, 16, 17, 18, 19, 20
 Jessen, K. F. W., 48, 337
Jewish Encyclopedia, *the*, 62, 285, 337
 Jews, 51-60, 62-65, 128-134 ; the citron (*etrog*) in Jewish ritual, 51-58, 62-65, 77, 83-84, 88-90, 105-107, 140, 282-284 ; trade in ritual citrons, 57-58, 107, 111, 170, 171, 282-286 ; citrus in Jewish art, 63-65, 107, 286 ; in Jewish botanical literature, 237 ; in Jewish medical literature, 128-134 ; in Jewish religious writings, 51-58, 105-107, 127, 165, 236 ; in other ancient Jewish writings, 53, 56.
See also " etrog "
 Johnson, G. W., 300, 337
 Joly, H. L., 16, 338
 Jordanus, Friar, 25, 338
 Joseph and Potiphar's Wife, citrus in the story of, in Jewish legend, 58-59 ; in Moslem legend, 59
 Josephus Flavius, 53, 56, 65, 77, 80, 338
 Jouan, Abel, 198, 338
 Juba II, King of Mauretania, 68, 69, 71
 Judah, Rabbi, of Nehardea, 65
 Judah Ben Benjamin, Rabbi, of Viterbo, 165
- Karo, Joseph, 165
Kedromelon (cedar apple), 70, 80, 81, 83
Kedros (cedar), 78, 79, 81
 " King " oranges, 122
Kitreos, *kitrinos*, 68
Kitron, *kitrion*, *kitrea*, xiii, 80, 81, 106
 Klein, S., 65, 338
 Kluge, F., 288, 289, 338
 Kohl, H., and Watzinger, C., 69, 338
Koran, *The*, 59
 Krom, N. J., 36, 338
Kumquat, 12, 13, 130
 Kuvera, Indian god of treasure, 23, 24
- Lacordaire, H. D., 155, 338
 La Fayette, Louise de, 277
 La Fontaine, Jean de, 208, 209, 338
 La Marche, Olivier de, 270, 338
 Lamb, Patrick, 306, 338
 Lancaster, Sir James, 250, 254, 306, 338, 339
 Lanzoni, G., 160, 309, 326
 La Porte, 277, 339
Laranja, 23
 Las Casas, Bartholomé de, 258, 339
 Laufer, Berthold, 5, 24, 30, 120, 251, 339
 La Varenne, 277, 279, 339
 La Vega, Garcilasso de, 262, 350
 Leão, Duarte Nunes de, *see* Nunes de Leão, Duarte
 Leathersellers' Company,
 Leclerc, L., 119, 126, 128, 130, 132, 339
 Le Comte, Louis, 248, 339
 Le Fèvre, Jean, 227, 339

- Legend, citrus in, Japanese, 16, 17; Jewish, 58, 59; Moslem, 59; Christian, 177-179, 243
- Le Grand d'Aussy, 208, 210, 211, 245, 276, 277, 279, 339
- Lehmann, Christophorus, 283, 339
- Lémery, Louis, 267, 276, 278, 339
- Lemon, xiii; its original home, 323; "lemon" used to designate oranges, xiii, 104, 105, 144, 145; "sweet lemon," 106, 236, 244, 245, 277; *lemon*, xiii
- Lemonade, 133, 134, 165, 166, 278-280, 306, 307
- Leo of Ostia, 109, 115, 339
- Leroquais, V., 176, 340
- Le Strange, G., 117, 123, 124, 235, 340
- L'Estrange, Sir Roger, 308, 340
- L'Etoile, Pierre de, 170, 340
- Lichnowsky, Prince E. M., 171, 340
- Liebbrandt, H. V. C., 257
- Lime, sour, 21, 25, 26, 36, 37, 138, 258, 259, 263, 323; sweet, 22, 29, 32, 244, 245, 323
- Limejuice, 267
- Linné, 2, 83, 105
- Linschoten, Jan Huyghen van, 247, 250, 254, 340
- Li Tai Po, 9, 10
- "Litanies of the Virgin," *see* Hours, Books of
- Livia, Villa of, 86, 87
- Lombard invasion of Italy, 109, 110
- Lope de Vega Carpio, 193, 196, 258, 340
- Loret, V., 43, 44, 68, 127, 326
- Louis XI, King of France, 238, 271, 340
- Loureiro, Joannis de, 4, 340
- Love, citrus symbolical of, in Japan, 19; in ancient Palestine, 19; in Italy, 163; in France, 19, 152, 273, 274; in Germany, 283
- Löw, I., 59, 60, 62, 100, 104, 141, 165, 171, 179, 284, 285, 340
- Low Countries, 151, 171, 223-232, 288-298; imports of citrus fruits, 196, 265, 289, 290; imports of citrus trees, 231, 232; the House of Orange, 227-230. *See also* Belgium, Holland
- Lunan, John, 266
- Lybia, 69
- Lydgate, Dan John, 212, 340
- Macinghi negli Strozzi, Alessandra, 196, 340
- Macrobius, 78, 80, 82, 341
- Madagascar, Isl., 39, 250, 251, 254, 255
- Madden, F. W., 54, 341
- Madeira Islands, 251, 255, 261
- Mademoiselle, La Grande, *see* Montpensier, Anne-Marie Louise of Orléans, Duchess of
- Maimonides, Moses, 56, 62, 127, 129, 341
- Makrizi, 124, 125
- Malay Archipelago, 4, 27-38, 323, origin of Malay citrus, 28, 29, 32-38
- Malay States, Federated, 1
- Malherbe, 273
- Malindi, 241, 242, 250, 251
- "Malta" oranges, 279
- Mandarin oranges, in China, 8, 9, 12; in Japan, 16-19; in England, 216; in Europe, 216
- Manni, Domenico Maria, 110, 341
- Maqqari, Ahmed Ibn Mohammed al-, 113, 114, 341
- Marco Polo, *see* Polo, Marco
- Mariéjol, J. H., 229, 341
- Marshall, Sir John, 40, 341

- Martial, 82, 91, 341
 Martyr, Peter, 115, 345
 Marvell, Andrew, 260
 Mascarenhas, Francisco, 248
 Massa, Niccolo, 160, 341
 Mas'udi, 117, 121, 123-125, 127, 128, 137, 144, 235, 341
 Matthesius, Johannes, 283
 Mattheus Silvaticus, *see* Silvatico, Matteo
 Matthiolus (Pierandrea Mattioli), 160, 341
 Maundeville, Sir John, 25, 341
 Maundrell, Henry, 142, 342
 Mauretania, 69
 Mauritius, Isl., 250
 Mazoe River (South Africa), 1
 Media, 43, 45, 46, 49-51
 "Median apple," 43, 45, 49, 79-81, 85, 91, 103, 110, 169
 Medici (family), 167-170, 187, 188, 202, 203, 215, 229
 Medicine, citrus in, 14, 49, 60-62, 106, 128-136, 144, 159, 160, 191, 192, 287, 288, 306-308. Against angina, 133; asthma, 60; biliousness, 131; cancer, 14; colics, 132, 133; constipation, 60; coughing, 14; fever, 130, 160; gout, 60; headache, 133; insect bites, 144; laryngitis, 133; nausea, 131, 133; pica, 60; plague, 131, 159, 160, 191, 287, 308; poisoning, 14, 49, 60, 61, 106, 131, 132, 191; snake-bites, 106; scorpion-bites, 129, 191; scurvy, 242, 254, 255, 257, 306; worms, 132, 159. The fruit, 49, 60, 61, 92, 106, 130, 131, 133, 159, 160, 241; the peel, 14, 60, 106, 131-133, 135, 136 the blossoms, 60, 281; the seeds, 60, 128, 131, 160; the roots, 132. In China, 14; Assyria, 41; Persia, 49, 60, 128; Rome, 60, 93; Greece, 60; Egypt, 60-62, 130, 132-134, 144; Palestine, 106; Mesopotamia; Italy, 159, 160; Spain, 132, 191, 192; Portugal, 242; France, 281; England, 254, 255, 306
Medicus (neo-Latin for orange), 104, 168, 169
 Mediterranean countries, first introduction of oranges and lemons into 99-109, 122-125, 128, 140, 141, 144, 145, 323
 Meister, Georg, 35, 250, 342
Ménagier de Paris, Le, 269, 270
 Merula (Giorgio Mirlani), 104, 168, 342
 Meshulam of Volterra, Rabbi, 144
 Mesopotamia, 40-43, 45, 46, 50, 51, 106, 107, 117, 119-130, 137; oranges from India, 117, 122-130; sweet oranges, 106, 125, 130, 131; lemons, 106, 107, 127-129
 Messibugo, Christopher of, 166, 167, 342
 Methodios Ebulios (Bishop of Tyre), 59
 Meyer, Ernst H. F., 25, 33, 50, 97, 127, 128, 135, 146, 342
 Michel, E., 56, 326
Midrash Tanhuma, 58, 59, 342
 Mignet, H., 194, 195, 342
 Milne, J. Grafton, 97, 342
Mishnah, 53, 62
 Molière, 276
 Mombasa, 145, 241, 250
 Monardes, Nicolas, 105, 192, 326
 Monconys, 142, 167, 342
 Monsoons, 4, 29, 30, 33, 99
 "Monsoonia," the home of the genus citrus, 4, 351
 Montpensier, Anne-Marie-Louise of Orléans Duchess of, 276
 Moret de Bourchenu (*see* Valbonnais)
 Morin, J., 210, 326
 Morocco, 117, 145, 256. *See also* Mauretania
 Moryson, Fynes, 165, 166, 342

- Mozambique, 250, 256
 Mueller, Baron Ferd. von, 4, 342
 Muqqadasi, 131, 342
 Murasaki, The Lady, 19, 343
 Murr, J., 71, 124, 343
 Musset, Alfred de, 281, 282
 Mustaqfi Billah (Caliph), 137
 Muwaffaq ed-Din Abd el-Latif ben Yusuf *see* Abd el-Latif
- Nabataean Agriculture, *see* Book of Nabat. Agr.
 Names (first), citrus in: Japanese, 16; Jewish, 65; English, 299; (surnames), citrus in: Italian, 110, 167-170; Jewish, 285, 286; English, 299; Belgian, 226; West Indian, 268; House of Orange, 227-230, 310-312; (geographical), citrus in, 19, 218, 227-229, 233, 250, 268, 310, 311
 Napier, Mrs. Alexander, 299, 343
Nāvancia, 23, 239
Nāranga, 23
Naranj, 23, 123-125, 129, 137-139, 147, 235
Naranja, 23
 Narses, 109
 Nasir-i-Khusrau, 139, 235, 343
 Navagero, 115, 193, 343
 "Navel" oranges, 143, 158, 159, 252, 265
 Nebel, Daniel, 287, 326
Nevantzion, 23, 103, 169
 Nicander of Colophon, 103, 343
 Nicolaus Specialis, *see* Specialis, N.
 Nicols, Thomas, 251, 343
 Normans, 115, 116, 163, 164
 Nostradamus (Michel de Nostredame), 273, 344
Numas's Books, 78
 Nunes de Leão, Duarte, 245, 292, 303, 339
- Okakura-Kakuzo, 9, 344
 Olympia (Temple of Zeus at), 72
 Oman, 40, 117, 121-126, 137
 Oppenheim, J. D., 237, 326
Orengat, *orangedo*, 269, 306, 308
 Orange, origin and evolution of name, 23, 27, 104, 105, 117, 155, 156, 227, 270, 288, 289, 299; its original home, 3, 4, 6 ff., 323; "French" orange, 105, 124, 125; "Sultani" orange, 122; "King" orange, 122; sweet oranges, 234-249; "Portugal" orange, 234, 244-246, 275, 276, 279, 304; "China" orange, 276, 280, 303, 304, 309; "India" orange, 275, 276, 279; "Malta" orange, 279
 Orange blossoms, as table decoration, 164, 217; at weddings, 208, 210, 281, 282; in salads, 272; as raw material for industry, 280, 281; orange blossom waters, *see* Scented waters; orange blossom incense, 13
 Orange-houses, in Greece, 76, 77, 91; in Rome, 76, 77, 91; in Italy, 190; in France, 201-211; in Germany, 204, 216-221; in England, 211-216; in Russia, 232, 233; in Sweden, 232
 Orange, the House of, 227-230, 310-312
 "Orange Peel" (a song), 311, 312
 Orangeade, 278, 279, 306, 307
 "Orangeism," "Orangemen," 310, 311

Orangeries, see Orange-houses

"Oranges and Lemons" (a nursery-rhyme), 301, 302

Orta, Garcia da, 243, 344

Otruj, xii, xiii

Otsar Yisrael, 106, 344

Oudin, Antoine, 167, 344

Oviedo y Valdés, Gonzalo Fernandez de, 240, 259, 344

Oxyrrhinchus Papyri, 67

Pacific Islands, 34

Palestine, 40, 43, 46, 51-57, 123, 154, 171; origin of Palestine citriculture, 51, 52, 57; citrons, 51-57, 62-65, 137-140, 143, 171; oranges, 99, 105, 106, 140, 141; sweet oranges, 105, 106, 137, 138, 144, 246; lemons, 99, 106, 107, 131, 141; limes, 99, 106, 107; shaddocks, 139, 140, 141; "fingered citrons," 143; "baladi orange," 237; "shamuti" orange, 237; "French" orange, 105, 124, 125, 144, 237, 238

Palladius, *Eleganter*, see *Eleganter Palladius*

Palladius, *Rutilius Taurus Aemilianus*, 80, 93, 94, 105, 156, 344

Pamphilos, 71, 72, 77, 80

"Paradise," 45, 69

"Paradise, apple of," 177. See also Shaddock

Paraguay, 1, 261

Pardess, 45

Parliamentary election, oranges in a, 309, 310

Paston Letters, the, 302, 344

Paulus Diaconus, 110, 344

Pauly-Wissowa, 40, 60, 69, 75, 80, 92, 106, 344

Pausanias, 72, 344

Peckham, Archbishop, 299

Pedro I (the Cruel, King of Castille), 114

Peel, Sir Robert, 311, 312

Pen ts'ao kan mu, 12

Pepys, Samuel, 215, 303, 305, 307, 308, 344

Perfumery, citrus in: citrus-blossom scents, 13, 159, 160, 163, 164, 165, 280, 281, 308, 309; citrus-blossom waters, 159, 160, 270, 273, 275, 280, 281, 308, 309; citrus-blossom oils, 273, 280, 281; ointments, 272, 273, 281; soap, 273; citrus fruits stuffed with cloves, 308

Peri ets-hadar, 51-57, 83, 84, 140, 141, 156

Perrault, 152, 274, 345

Persia, 40, 43-51, 131, 246; citrus in Persian art, 59; in Persian medical literature, 106; in Persian poetry, 131

"Persian apple," 43, 45, 49, 53, 80, 110

Peru, 261, 262

Peter Martyr, see Martyr, Peter

Petrarch, 227, 228

Petronius, 79, 88, 90, 100, 345

Pfizmaier, A., 8, 345

Phaenias of Eresos, 81

Philip II (King of Spain), 195, 345

Pieri, Paolino, 184

Pitture di Ercolano e Contorni, 89, 333

Pliny, 38, 58, 60, 61, 78-80, 82, 87, 88, 96-101, 106, 107, 345

Plutarch, 55, 58, 91, 345

Poland, 284

Poliziano, 169, 345

Polo, Marco, 29, 31, 251, 255, 345

- Pomeranze, pomarancia*, 236, 282, 288, 289
Pomeranzenschiessen, 282
 Pompei, 88-90, 98, 100-102, 107, 108
Poncirus trifoliata, Raf., 4, 6, 7
 Pontanus, Jovianus, 169, 186, 239, 326
 Popper, L. M., 286, 345
 Portugal, 240, 241, 245; acclimatization of sweet oranges, 240, 246, 249, 303; export trade in sweet oranges, 243-245, 249, 276, 287, 300, 303; citrus in Portugal art, 153; in Portugal medical literature, 242, 243; in Portugal poetry, 240, 241; in other Portugal writings, 241-245, 247, 248, 251-253, 292
 "Portugal oranges," 234, 244-246, 275, 276, 279, 304
 Powell, H. Clark, 257, 326
 Pratt, Thomas (Bishop), 303
 Preisigke, F., 68, 345
 Presents, citrus fruits as: in China, 8; in Italy, 150; in France, 151, 152, 200, 273, 274, 277; in Germany, 283; in England, 300-302, 310
 Preserves of citrus fruits: in brine, 37; in honey, 13; in salt, 134; candied fruits, 166, 259, 269; candied peels, 176, 269
 Production (annual) of citrus fruit in the chief producing countries, 317-318
 Provence, citrus in, in France, 272; in Germany, 283

 Qaher (Caliph), 117, 122, 124
 Quintinye, de la, 207, 210, 216, 276, 326

 Rabelais, François, 164, 165, 273, 275, 345
 Rabisha, William, 306, 345
 Rea, John, 216, 303, 345
 Réaux, Tallement des, 277, 345
 Recipes by famous cooks, citrus in: by Christoforo di Messisbugo, 166, 167; by Taillevent, 269; by La Varenne, 279; by Patrick Lamb, 306; by Mary Eale, 308
 Redi, Francesco, 160, 345
 Reinaud, M., 10, 11, 21, 30, 32, 38, 121, 126, 251, 346
 Reinhardt, L., 100, 124, 346
Relazioni degli Ambasciatori Veneti, 184, 189, 346
 Religion, *see* Ritual
 Renesse, Th. de, 226, 346
 Revon, M., 15, 17, 346
Revue Archéologique, 65, 346
 Ribeiro de Macedo, Duarte, 248
 Ricci, Matteo, 247, 346
 Riccio, Agostino del, 188
 Richard I, Cœur-de-Lion, 139
 Riebeek, Jan van, 257
 Risso, A., and Poiteau, A., 47, 82, 246, 275, 281, 326
 Ritual, citrus in: Chinese, 8; Jewish, 52-58, 63-65, 77, 83, 84, 88-90, 106, 107, 140, 141, 170, 171, 282-285, 323; Greek, 71, 72, 77
 Rivers, as agents in propagating citrus, 2, 259, 262
 Rolle, F., 271, 346
 Romoli, Domenico, 160, 166, 346
 Ronsard, 202, 274, 346
 Rossi, G. B. de, 189, 347
 Rostovizeff, M., 66, 97, 98, 347
 Roxburgh, William, 21, 347
 Rullan, J., 137, 249, 326

Rumphius, G. E., 33-35, 245, 248, 347

Russia, 232, 233

Rutter, Eldon, 107, 347

Rye, William Brenchley, 214, 347

Sacy, Sylvestre de, 124, 125, 235, 327

Saint-Pierre, Bernardin de, 250, 347

St. Clement Danes, Church of, in London, 302, 334

St. Constanza, *see* Constantia

St. Dominic, *see* Dominic, St.

St. Helena, (Isl.), 253-257

St. Theresa, *see* Theresa, St.

San Gemignano, Folgorio di, 163

Sanskrit language, citrus in the, 22, 23, 24, 52

Sative Ménippée, La, 272, 347

Savonarola, Michele, 159, 347

Sayce, A. H., 40, 347

Scented waters : from orange blossoms, 160, 164, 165, 270, 275, 278, 280, 281, 306, 308, 309 ; from lemon blossoms, 159, 280 ; fountains of, 165, 270 ; in food, 278, 308

Schack, A. v., 116, 117, 347

Schiaparelli, A., 183, 347

Schimpfer, A. F. W., 15, 347

Schipper, I., 111, 347

Schürer, E., 77, 347

Schweinfurth, G., 246, 347

Scotland, *see* England

Scribonius Largus, 60, 80

Scudéry, Madeleine de, 208, 348

Scurvy, 242, 254, 255, 257, 306

Sea currents, 39

Semmedo, Alvaro, 248, 348

Seneca, 91

Septuagint, 56

Serres, Olivier de, 199, 203-206, 272, 275, 348

Seth, Simeon, *see* Simeon Seth

Severus (Bishop of Cologne), 111

Sévigné, Madame de, 209, 281, 348

Séville, 114, 193-196

Shaddock, 4, 6, 12, 26, 34, 118, 139-141, 144-147, 158, 162, 177, 187, 265-267, 303, 323 ; origin of the name, 266 ; also called "Adam's apple," 139-141, 162, 177, 187, 303 ; other names for it, 26, 146, 147, 265-267. In food : in Palestine, 141 ; in Egypt, 145 ; in Spain, 146 ; in France, 272-275 ; in England, 306

Shakespeare, 303, 308, 348

Shirley, James, 307, 347

Sicily, 115-117

Sierra Leone, 252, 253, 256

Siguença, Joseph de, 194, 348

Silvatico, Matteo, 159, 341

Simeon Seth, 123, 348

Simon the Maccabee, 53-56, 77

Slane, Baron de, 145

Sloane, Hans, 265-267, 348

Smith, F. Porter, 12, 14, 348

Snuffboxes from citrus fruits, 308, 309

Soothill, W. E., 21, 31, 120, 121, 250, 348

Specialis, Nicolaus, 117, 348

Soranus of Ephesus, 60

- Spain, xi, 110, 112-115, 146-148, 190-197; oranges, 113-115, 146-148, 191-197; lemons, 114, 115, 146-148, 191-197; citrons, 114, 146-148, 191-197, 284, 285; limes, 114, 195; shaddocks, 146-148; sweet oranges, 239, 244, 245; citrus imports, 244; citrus export trade, 196, 284, 285, 289-292, 299, 300; Charles V, 193-195; Philip II, 194, 195, 245; citrus in Spanish art, 153, 154, 195-197; in Spanish botanical and horticultural literature, 105, 191, 192; in Spanish medical literature, 192; in Spanish poetry, 178, 193, 196, 258; in other Spanish writings, 115, 142, 186, 195, 240, 247, 258, 259, 290
- Spratt, Thomas (Bishop), 303, 348
- Straparola, G. F., 164, 349
- Strasburger, E., 273, 349
- Suetonius, 86, 349
- Sukenik, L., 65, 349
- "Sultani" oranges, 122
- Superstitions, Chinese, 14; Jewish, 62; Roman, 93-94; Arab, 129, 130, 148; German, 222, 223
- Su Tung-p'o, 11
- Sweden, 232
- Sykes, Sir Percy, 121, 246, 349
- Symbolism, citrus in, in China, 5, 6, 8; Japan, 16, 19; Italy, 163, 177, 178, 187; Germany, 283; in Christian religious literature, 83, 178. Citrus as symbols of: happiness, 5, 6, 18; eternity, 16; love, 19, 152, 163, 187, 273, 274; purity, 83, 178
- "Sympathetic ink," lemon juice as, 309
- Syria, 46, 51, 57, 123, 137, 138, 141, 142
- Syrups, 131, 133
- Tabary, al-, 128
- Tabernacles, Feast of, 52-58, 63-65, 77, 83
- Tachibana* orange, 16, 17, 18
- Taegio, Bartholomeo, 187, 349
- Tafur, Pero, 290, 349
- Taillevent (Guillaume Tirel, called), 269, 349
- Tallith* (Jewish prayer shawl), 90
- Talmud*, 53, 58, 62, 63, 65, 106, 107, 125, 236, 349; "spherical citron," 106, 125; "sweet citron," 106, 236; "Ethiopian citron," 106, 107
- Tanaka, T., 12, 19, 20, 267, 327
- Tanara, Vincenzo, 167, 349
- Tangerine, *see* Mandarin orange
- Targioni-Tozzetti, A., 47, 100, 170, 184, 188, 216, 235, 236, 238, 239, 349
- Taronja, teronja*, xii, 23, 105, 137, 249
- Tebbes, Balthazar, 253
- Temple, Sir William, 216, 230, 304, 349
- Theophrastes, 49-51, 58, 60, 71, 78, 79, 82, 349
- Theresa, St., of Avila, 244
- Thompson, R. Campbell, 41, 43, 349
- Tin-Tun-Ling, 10
- Tolkowsky, S., 52, 57, 100, 168, 237, 349, 350
- Trade in citrus fruits, China, 14, 248; Greece, 47-48, 51; Roman Empire, 57-58; Italy, 57-58, 110, 170, 182, 283-288; France, 199, 270, 275, 276, 279, 280, 281; Spain, 111, 197, 244, 284, 285, 289-292; Arabia, 96, 97; Moslem Empire, 131; Portugal, 244, 245, 249, 292, 303; Austria, 111, 170, 171, 284-286; Germany, 111, 170, 171, 282, 284-289; Poland, 111, 170, 171, 284; England and Scotland, 245, 289, 290, 292, 299-304, 307, 309; Belgium, 171, 196, 290-293; Holland, 265, 288, 289; Palestine, 131; Corfu, 171, 284; America, 265, 267, 276; in citrons for Jewish feast of Tabernacles, 57-58, 111, 170, 171, 282-286; present-day world trade in citrus fruits, 318-324. *See also* Cost

- Trade by-products: dried peels, 14, 287, 288, 292; lemon juice, 165, 166, 287, 288, 307; lime juice, 267; sour-orange juice, 288; citron oil, 288; scented waters, 288, 308, 309; orange blossoms, 275, 281; in China, 14; Crete, 165, 166; Turkey, 165, 166; France, 270, 275, 280, 281; Germany, 287, 288; Low Countries, 292; England, 308, 309; Portugal, 308
- blossoms, candied, 288; as raw material for industry, 275, 281
- Trigault, Nicolas, 247
- Trinidad, (Isl.), *see* West Indies, America
- Tu-fu, 10
- Tunisia, 100, 145
- Turunj*, *trunj*, xii, 24, 104, 105, 137, 138, 139, 235; different meanings in different countries, 137
- Tusculum (Frascati), 98, 102, 103, 107
- Tussac, Chevalier de, 266, 350
- United States, 1
- Uruguay, 1, 2, 261
- Used for, citrus: cleaning metals, 34, 36, 37; polishing metals, 34; cleaning weapons, 36, 37; poisoning weapons, 36, 37; washing garments, 36, 37; removing stains, 131; protecting garments from moths, 49, 60; preparing paints, 36; preparing ointments, 36; washing the hair, 36; tonifying the hair, 135, 136; removing perspiration, 34; beautifying the complexion, 160; replacing vinegar, 133; preparing drinks, *see* Drinks; flavouring tea, 9, 16; chewing with betel-nut, 33; purifying muddy water, 160; secret writing, 309; making knife-handles, 36; making bows, 7; making furniture, 191; making belts, 275; in games, *see* Games; in religious practices, *see* Ritual; in food, *see* Food; in drink, *see* Drinks
- Utruj*, xii, xiii, 11, 24, 106, 125, 126, 137, 138, 145, 147; "round *utruj*," 106, 123-125
- Valbonnais (G. P. Moret de Bourchenu, Marquis de), 199, 350
- Valeriani, O., 235, 236, 350
- Valla, Lorenzo, 193, 350
- Valle, Piero della, 25, 26, 350
- Value of citrus fruits at different periods, *see* Cost
- Vandercook, J. W., 268, 350
- Van Meteren, 196, 291, 292, 342
- Van Sterbeek, Franciscus, 225, 227, 327
- Varro, 85, 350
- Varthema, Ludovico de, 33, 36, 239, 350
- Vasco da Gama, *see* da Gama, Vasco
- Vavilov, N. J., 3, 350
- Velleius Paterculus, 82, 351
- Vidal, Pierre, 227, 351
- Villani, 184
- Vinsauf, Geoffrey de, 139, 298
- Virgil, 60, 61, 69, 79, 85, 106, 107, 351
- Vitry, Jacques de, 83, 139-141, 150, 227
- Volckamer, Joh. C., 35, 91, 221-223, 243, 265, 287, 288, 327
- Waller, Edmund, 260, 351
- Walpole, Horace, 279, 280, 351
- Wander, K. F., 283, 351
- Warburg, O., 4, 351
- Ward, F. Kingdon, 27, 351

- Wardrobe Book of Edward I*, 299
 Warmington, H., 20, 98, 102, 120, 351
 Warner, Ralph, 226, 294-296, 351
 Wars, citrus fruits and, 109, 115
 Watt, Sir George, 21, 22, 23, 24, 26, 27, 100, 351
 Webber, H. J., 33, 265, 351
 Weekly, E., 299, 351
 West Indies, 257-259, 265-268; early citrus exports to Europe,
 265-266, 276, 287, 296
 Whitley, W. T., 310, 351
 Wiener, M., 171, 285, 351
 Wild citrons, 4, 12, 21
 — lemons, 4, 21, 22
 — limes, 4, 21, 22
 — oranges, 4, 6, 12, 22
 — shaddocks, 6, 12
 Wine, flavouring: with citrus peel, in China, 13; Rome, 59-60; Italy,
 167; France, 272; Germany, 288; Low Countries, 292, 295-298
 — from oranges, in China, 11
 Wolsey, Cardinal, 308
 Wenkyn de Worde, 300
 Wytcherley, 308, 351

Xenophon, 46, 351

- "Yemen, Apples of," 107
 Yetts, W. Percival, 6, 8, 351
 Young, G. F., 168, 352
Yusuf and Zuleikah, 59

- Zanzibar, 242, 250, 251
 Zedekiah Ben Abraham, Rabbi, of Rome, 165
Zedratritrons, 83
Zitrons, Citronis, Citrons, 288



~~5 cal~~
8.31/11/78 4.31

S —

Orange - Cultivation

Tile

Heating 7 Citrus fruits

5

"A book that is shut is but a block"

CENTRAL ARCHAEOLOGICAL LIBRARY

GOVT. OF INDIA
Department of Archaeology
NEW DELHI.

Please help us to keep the book
clean and moving.